



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

```
1 ATGAGCCAGC CCAGGCCCCG CTACGTGGTA GACAGAGCCG CATACTCCCT
51 TACCCTCTTC GACGATGAGT TTGAGAAGAA GGACCGGACA TACCCAGTGG
101 GAGAGAAACT TCGCAATGCC TTCAGATGTT CTCAGCCAA GATCAAAGCT
151 GTGGTGTGTT GGCTGCTGCC TGTGCTCTCC TGGCTCCCA AGTACAAGAT
201 TAAAGACTAC ATCATTCCTG ACCTGCTCGG TGGACTCAGC GGGGGATCCA
251 TCCAGGTCCC ACAAGGCATG GCATTTGCTC TGCTGGCCAA CCTTCCTGCA
301 GTCAATGGCC TCTACTCCTC CTTCTTCCCC CTCCTGACCT ACTTCTTCCT
351 GGGGGGTGTT CACCAGATGG TGCCAGGTAC CTTTGCCGTT ATCAGCATCC
401 TGGTGGGTAA CATCTGTCTG CAGCTGGCCC CAGAGTCGAA ATTCCAGGTC
451 TTCAACAATG CCACCAATGA GAGCTATGTG GACACAGCAG CCATGGAGGC
501 TGAGAGGCTG CACATGCTAG CTACGCTAGC CTGCCTCACC GCCATCATCC
551 AGATGGGTCT GGGCTTTCATG CAGTTTGGCT TTGTGGCCAT CTACCTCTCC
601 GAGTCCTTCA TCCGGGGCTT CATGACGGCC GCCGGCCTGC AGATCCTGAT
651 TTCGGTGTCT AAGTACATCT TCGGACTGAC CATCCCCTCC TACACAGGCC
701 CAGGTCCTAT CGTCTTTACC TTCATTGACA TTTGCAAAAA CCTCCCCAC
751 ACCAACATCG CCTCGCTCAT CTTGCTCTC ATCAGCGGTG CCTTCCTGGT
801 GCTGGTGAAG GAGCTCAATG CTCGCTACAT GCACAAGATT CGCTTCCCA
851 TCCCTACAGA GATGATTGTG GTGGTGGTGG CAACAGCTAT CTCCGGGGGC
901 TGTAAGCCCT CCAAAAAGTA TCACATGCAG ATCGTGGGAG AAATCCAACG
951 CGGGTTCCTCC ACCCCGGTGT CGCCTGTGGT CTCACAGTGG AAGGACATGA
1001 TAGGCACAGC CTTCTCCCTA GCCATCGTGA GCTACGTCAT CAACCTGGCT
1051 ATGGGCCCGA CCCTGGCCAA CAAGCACGGC TACGACGTGG ATTCGAACCA
1101 GGAGATGATC GCTCTCGGCT GCAGCAACTT CTTTGGCTCC TTCTTTAAAA
1151 TTCATGTCTAT TTGCTGTGCG CTTTCTGTCA CTCTGGCTGT GGATGGAGCT
1201 GGAGGAAAAT CCCAGGTGGC CAGCCTGTGT GTGTCTCTGG TGGTGATGAT
1251 CACCATGCTG GTCCTGGGGA TCTATCTGTA TCCTCTCCCT AAGTCTGTGC
1301 TAGGAGCCCT GATCGCTGTC AATCTCAAGA ACTCCCTCAA GCAACTCACC
1351 GACCCCTACT ACCTGTGGAG GAAGAGCAAG CTGGACTGTT GCATCTGGGT
1401 AGTGAGCTTC CTCTCCTCCT TCTTCCTCAG CCTGCCCTAT GGTGTGGCAG
1451 TGGGTGTGCG CTTCTCCGTC CTGGTCTGGT TCTTCAGAC TCAGTTTCGA
1501 AATGGCTATG CACTGGCCCA GGTGATGGAC ACTGACATT ATGTGAATCC
1551 CAAGACCTAT AATAGGGCCC AGGATATCCA GGGGATTAAA ATCATCACGT
1601 ACTGCTCCCC TCTCTACTTT GCCAACTCAG AGATCTTCAG GCAAAAGGTC
1651 ATCGCCAAGA CTGTCTCCCT GCAGGAGCTG CAGCAGGACT TTGAGAATGC
1701 GCCCCCACC GACCCCAACA ACAACCAGAC CCCGGCTAAC GGCACCAGCG
1751 TGTCCTATAT CACCTTCAGC CCTGACAGCT CCTCACCTGC CCAGAGTGAG
1801 CCACCAGCCT CCGCTGAGGC CCCCAGGAG CCCAGTGACA TGCTGGCCAG
1851 CGTCCCACCC TTCGTACCT TCCACACCT CATCCTGGAC ATGAGTGGAG
1901 TCAGCTTCGT GGACTTGATG GGCATCAAGG CCCTGGCCAA GCTGAGCTCC
1951 ACCTATGGGA AGATCGGCGT GAAGGTCTTC TTGGTGAACA TCCATGCCCA
2001 GGTGTACAAT GACATTAGCC ATGGAGGCGT CTTTGAGGAT GGGAGTCTAG
2051 AATGCAAGCA CGTCTTTCCC AGCATACATG ACGCAGTCCT CTTTGCCAG
2101 GCAAATGCTA GAGACGTGAC CCCAGGACAC AACTTCCAAG GGGCTCCAGG
2151 GGATGCTGAG CTCTCCTTGT ACGACTCAGA GGAGGACATT CGCAGCTACT
2201 GGGACTTAGA GCAGGAGATG TTCGGGAGCA TGTTTCACGC AGAGACCCTG
2251 ACCGCCCTGT GA (SEQ ID NO:1)
```

FEATURES:  
Start Codon: 1  
Stop Codon: 2260

FIGURE 1A



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**HOMOLOGOUS PROTEINS:**

Top BLAST Hits:

	Score	E
gb AAF81911.1 AF279265_1 (AF279265) putative anion transpor...	476	e-133
gb AAF71715.1 AF230376_1 (AF230376) prestin [Meriones ungui...	471	e-131
ref NP_000432.1  pendrin [Homo sapiens] >gi 11421915 ref XP...	451	e-125
ref NP_035997.1  Pendred syndrome homolog (human); Pendred'...	448	e-124
ref NP_062087.1  Pendred syndrome homolog (human) [Rattus n...	447	e-124
ref NP_067328.1  down-regulated in adenoma [Mus musculus] >...	434	e-120
ref NP_000102.1  down-regulated in adenoma protein [Homo sa...	418	e-115
sp O70531 DTD_RAT SULFATE TRANSPORTER (DIASTROPHIC DYSPLASI...	365	1e-99
ref NP_000103.1  sulfate anion transporter 1; Diastrophic d...	362	1e-98
ref NP_031911.1  diastrophic dysplasia [Mus musculus] >gi 2...	357	4e-97

BLAST to dbEST:

	Score	E
gi 8630793 /dataset=dbest /taxon=960...	523	e-146

**EXPRESSION INFORMATION FOR MODULATORY USE:**

library source:

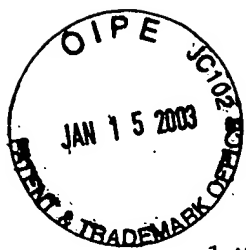
Expression information from BLAST dbEST hits:

gi|8630793 Human head-neck

Expression information from PCR-based tissue screening panels:

Human fetal lung

FIGURE 1B



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1 MSQPRPRVYV DRAAYSLTLF DDEFKKDRT YPVGEKLRNA FRCSSAKIKA  
51 VVFGLLPVLS WLPKYIKDY IIPDLLGGLS GGSIQVPQGM AFALLANLPA  
101 VNGLYSSFFP LLTYFFLGGV HQMVPGTFAV ISILVGNICL QLAPESKFQV  
151 FNNATNESYV DTAAMEAERL HVSATLACLT AIIQMGLGFM QFGFVAIYLS  
201 ESFIRGFMTA AGLQILISVL KYIFGLTIPS YTGPGSIVFT FIDICKNLPH  
251 TNIASLIFAL ISGAFLVLVK ELNARYMHKI RFPIPTMIV VVVATAISGG  
301 CKMPKKYHMQ IVGEIQRGFP TPVSPVVSQW KDMIGTAFSL AIVSYVINLA  
351 MGRTLANKHG YDVSNQEMI ALGCSNFFGS FFKIHVICCA LSVTLAVDGA  
401 GGKSQVASLC VSLVVMITML VLGIIYLYPLP KSVLGALIAV NLKNSLKQLT  
451 DPYYLWRKSK LDCCIWVVSF LSSFFLSLPY GVAVGVAFSV LVVVFTQQR  
501 NGYALAQVMD TDIYVNPPTY NRAQDIQGIK IITYCSPLYF ANSEIFRQKV  
551 IAKTVSLQEL QQDFENAPPT DPNNNQTPAN GTSVSYITFS PDSSSPAQSE  
601 PPASAEAPGE PSDMLASVPP FVTFHTLILD MSGVSFVDLM GIKALAKLSS  
651 TYGKIGVKVF LVNIHAQVYN DISHGGVFED GSLECKHVFP SIHDAVLFAQ  
701 ANARDVTPGH NFQAPGDAE LSLYDSEEDI RSYWDLQEM FGSMFHAETL  
751 TAL (SEQ ID NO:2)

#### FEATURES:

##### Functional domains and key regions:

[1] PDOC00001 PS00001 ASN\_GLYCOSYLATION  
N-glycosylation site

Number of matches: 3

- 1 153-156 NATN
- 2 156-159 NESY
- 3 580-583 NGTS

[2] PDOC00005 PS00005 PKC\_PHOSPHO\_SITE  
Protein kinase C phosphorylation site

Number of matches: 2

- 1 45-47 SAK
- 2 445-447 SLK

[3] PDOC00006 PS00006 CK2\_PHOSPHO\_SITE  
Casein kinase II phosphorylation site

Number of matches: 11

- 1 18-21 TLFD
- 2 158-161 SYVD
- 3 240-243 TFID
- 4 365-368 SNQE
- 5 459-462 SKLD
- 6 556-559 SLQE
- 7 635-638 SFVD
- 8 691-694 SIHD
- 9 722-725 SLYD
- 10 726-729 SEED
- 11 732-735 SYWD

[4] PDOC00007 PS00007 TYR\_PHOSPHO\_SITE  
Tyrosine kinase phosphorylation site

Number of matches: 2

- 1 7-15 RYVVDRAAY
- 2 447-454 KQLTDPYY

FIGURE 2A



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[5] PDOC00008 PS00008 MYRISTYL  
N-myristoylation site

Number of matches: 10

1	77-82	GGLSGG
2	78-83	GLSGGS
3	89-94	GMAFAL
4	103-108	GLYSSF
5	335-340	GTAFLS
6	435-440	GALIAV
7	481-486	GVAVG
8	485-490	GVAFSV
9	581-586	GTSVSY
10	681-686	GSLECK

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	51	71	0.893	Putative
2	82	102	1.020	Certain
3	107	127	1.729	Certain
4	130	150	1.497	Certain
5	186	206	1.723	Certain
6	228	248	1.517	Certain
7	256	276	1.898	Certain
8	288	308	1.252	Certain
9	338	358	1.568	Certain
10	383	403	1.304	Certain
11	412	432	2.345	Certain
12	469	489	1.997	Certain
13	619	639	1.146	Certain

FIGURE 2B



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**BLAST Alignment to Top Hit:**

>gb|AAF81911.1|AF279265\_1 (AF279265) putative anion transporter 1 [Homo sapiens]

Length = 738

Score = 476 bits (1224), Expect = e-133

Identities = 263/724 (36%), Positives = 428/724 (58%), Gaps = 36/724 (4%)

Frame = +3

Query: 54 LFDDEFEEKDR--TYPVGEKLRNAFRCSAKIKAVVFGLLPVLSWLPKYKIKDYIIPDLL 227  
L + EE R + P + R +CS A+ A++ LPVL WLP+Y ++D+++ DLL  
Sbjct: 15 LNQEHLLEELGRWSAPRTHQWRWLQCSRARAYALLLQHLPVLVWLPYRPVPRDWLLGDLL 74

Query: 228 GGLSGGSIQVPQGMFAFALLANLPAVNGLYSSFFPLLTYYFFLGGVHQMPGTFAVISILVG 407  
GLS +Q+PQG+A+ALLA LP V GLYSSF+P+ YF G + GTFAV+S++VG  
Sbjct: 75 SGLSVAIMQLPQGLAYALLAGLPPVFGLYSSFPYFIFYFLFGTSRHSISVGTFAVMSVMVG 134

Query: 408 NICLQLAPESKFQVFNATNESYVDTAAMEAERLHVSATLACLTAIQMGLGFMQFGFVA 587  
++ LAP+ A N+S ++ A +A R+ V++TL+ L + Q+GLG + FGFV  
Sbjct: 135 SVTESLAPQ-----ALNDSMINETARVQVASTLSVLVGLFQVGLGLIHFGFVV 186

Query: 588 IYLSSEFIRGFMTAAGLQILISVLKYIFGLTIPSYTGPISIVFTFIDICKNLPHTNIASL 767  
YLSE +RG+ TAA +Q+ +S LKY+FGL + S++GP S+++T +++C LP + + ++  
Sbjct: 187 TYLSEPLVRGYTTAAAVQVFVSQ LKYVFGHLSSHSGPLSLIYTVLEVCKWKL PQSKVGP 246

Query: 768 IFALISGAFLVLVKELNARYMHKIRFPIPTMIVVVVATAISGGCKMPKHYHMQUIVGEIQ 947  
+ A ++G LV+VK LN + ++ PIP E++ ++ AT IS G + ++ + +VG I  
Sbjct: 247 VTAAGVAGVVLVVKLLNDKLQQQLPMPIPGELLTIGATGISYGMGLKHRFEVDVGNIP 306

Query: 948 RGFTPVPSPVVLQWKDMIGTAFSLAIVSYVINLAMGRTLANKHGYDVDSNQEMIALGCSN 1127  
G PV+P + ++G+AF++A+V + I +++G+ A +HGY VDSNQE++ALG SN  
Sbjct: 307 AGLVPPVAPNTQLFSKLVGSAFTIAVVGFAIAISLGKIFALRHGYRVDNSQELVALGSLN 366

Query: 1128 FFGSFFKIHVICALSVTLAVDAGGKSQVASLCVSLVVMITMLVLGIYLYPLPKSVLGA 1307  
G F+ + C++S +L + GG SQVA SL +++ ++ LG + LPK+VL A  
Sbjct: 367 LIGGIFQCFPVSCMSRSLVQESTGGNSQVAGAISSLFILLIIVKLGELFHDLPKAVLAA 426

Query: 1308 LIAVNLKNSLKQLTDPYYLWRKSKLDCCIWVVSFLSSFFLSLPYGVAVGVAFSVLVVVFQ 1487  
+I VNLK L+QL+D LW+ ++ D IW+V+F ++ L+L G+ V V FS+L+VV +  
Sbjct: 427 IIIVNLKGMRLQLSDMRSLWKANRADLLIWLVTFTATILLNLDLGLVAVIFSLLL VVR 486

Query: 1488 TQFRNGYALAQVMDTDIYVNP KTYNRAQDIQGIKIITYCSPLYFANSEIF----- 1637  
TQ + L QV DTDIY + Y+ A++++G+K+ + +YFAN+E +  
Sbjct: 487 TQMPHYSVLGQVPDTDIYRDVAEYSEAKEVRGVFRSSATVYFANAEFYSDALKQRCGV 546

Query: 1638 -----RQKVIK--TVSLQELQQDFE-NAPPTDPNNNQTPAN-GTSVSYI----- 1760  
++K++ K + L++LQ++ + P N TS+ +  
Sbjct: 547 DVDFLISQKKLLKKQEQLKQLKQKEKLRKQAASPKGASVSINVNTSLEDMRSNNVED 606

Query: 1761 -----TFSPDSSSPAQSEPPASAEAPGEPDMLASVPPFVTFTLILDMSGVSFVDLMGI 1925  
S D A + ++AP + S + A P FH+LILD+ +SFVD + +  
Sbjct: 607 CKMMQVSSGDKMEDATANGQEDSKAP-DGSTLKALGLPQPDFHSLILDGALSFDVTVCL 665

Query: 1926 KALAKLSSTYGGKIGVKVFLVNIHAQVYNDISHGGVFEDGSLECKHVFPSIHDAVLFAQAN 2105  
K+L + + +I V+V++ H+ V + + G F D S+ KH+F S+HDAV FA +  
Sbjct: 666 KSLKNIFHDFREIEVEVYMAACHSPVVSQLEAGHFF-DASITKKHLFASVHDAVTFALQH 724

Query: 2106 ARDV 2117  
R V  
Sbjct: 725 PRPV 728 (SEQ ID NO :4)

**Hammer search results (Pfam):**

Model	Description	Score	E-value	N
PF00916	Sulfate transporter family	254.5	1.5e-72	1
PF00189	Ribosomal protein S3, C-terminal domain.	3.3	8	1

**FIGURE 2C**



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Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00916	1/1	187	497 ..	1	328 [.]	254.5	1.5e-72
PF00189	1/1	651	661 ..	79	89 .]	3.3	8

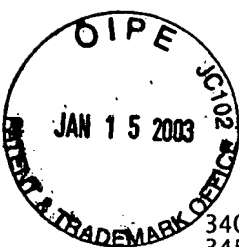
FIGURE 2D



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1	CTGGGTTCT	ATGTGGGGAG	GTCATGCTCC	CCACTCATTG	AGCCCCCCCA
51	GGCAAACCAC	CTGGACAGCC	AGACCCATGC	AGACTCTGGA	GCAGGTGGAG
101	AGGAAGAGTG	AGACCACCCC	GCCTCACGGG	CGGTGAAGGG	CCGGCAGCCT
151	CTGAATAGTC	TCTGCTAGGA	GGTAGAAAGC	ACCCTCCCAT	CTTAATCATA
201	GTAATCATCG	CCACTACCAT	TACTGGGTG	CCTATAAAAG	GCCAGCCTCT
251	TCATACACAT	GATCTCACTG	AATCCTCATA	GCATCTGCCT	GCGACTGTTA
301	TTATCCCCAT	TTACAGATGA	AGAAACTGAA	TCTTTGAACC	CAGGTCATCT
351	GGCTCTCAAA	CTTGTGCTGT	TTTCCCTAAG	CCACCCGGTC	TCTCATTTCT
401	CCCACTGAAA	TGTCTCACAT	GCCATTGCC	TACTCATTT	CTGCCCATGT
451	CTCCTCCAAA	ACACCATTTA	TCAATTCGCT	CAACAAGTAT	GTGTTGAGTA
501	CACACTAAGG	GCCAGCGGAG	GGGCTGGGCA	CAGGCGCTGG	GGGTAGGTTT
551	ATTCTCCAC	CTTCGCTTCT	GCTGGGTATC	ACCTGTGGGG	TCTTGCCGGG
601	CATCCCACCC	TCACCTGTAG	TTCAAGTGGA	CCTTGGGATC	CCAAGACCAA
651	ATGAATGGAA	TGCACCAGCC	CAGCCTTCAC	CAACTTGAGC	ACAATCTTAT
701	TCATAATAGA	AACACACATT	TGCATCACAC	TTTACATTTT	ACACAACCCC
751	TTCTTATCCA	TTAACTCATT	TGATCTTCAC	AACAACCCCTG	TGAGATATGT
801	CTGTTACTCC	CACTTTAGTG	ATACAGAATC	TGAGGTTTGA	AAAGTAATGC
851	TGACCATTCT	GCCTCATTTA	TAAAAGCAGG	ATTAACCCAG	GCTCCTGGAC
901	CCTTCCACAA	AAGGCATTAA	GCAACCTGCT	CCCCTCTGAC	AACCTCCCCT
951	GTCACCCAGG	CTCTCCTCTG	GGAAGTTGGG	GGCATCTCTA	GCCCCCAAGT
1001	AGTTACTCAT	TTTCAACCCC	ATCTCAAATC	TTTTGCCAAA	CTGGCCACAG
1051	CCACCCACCA	CTCCCCACCT	CCCAGATACA	AATCCTCACT	CTAAGCCTTC
1101	CCCATCTCTT	TCTTCTCTGT	CCTTCTTTCT	CTGTGGTCCT	CTGAGCAACT
1151	TCTCCCAGCT	CTGGGAGGTA	GAGGGGAGGT	GGGAGACCCA	GTAATTGGAA
1201	GAGGGAGGGG	GAAAGGTTCC	TACAGGGAAC	TCCTCCGGGC	CTCAGGGGCC
1251	CTGGCACTCA	GCTCTGCCCA	TCTCAGCTCC	TGGAACGTCA	GCCAGGTTGC
1301	GCAAAAAGTG	AGGAGGAGAG	GAGCGGCAGT	ACACAAGGGT	GGGGGAAAGA
1351	TTAGGCACAG	GAAGCCGTGG	GAGAGAGAGC	CGGCAGGTGG	ACCATCCTGG
1401	TTTCCCCACA	CACACCATTG	TCCCCCTGGG	AAACCTGTTG	GTGAAGTTCT
1451	AGATGTCTTA	TCCAAGAAGG	GTCCTCTTGA	GGTCATCTCA	GCTATCCCCC
1501	TGCCTCTAGG	CAAGCTGTTT	TCTGTTTCTT	CCAAGCTGAC	TGGCTGAATG
1551	GTAGGAGCCT	TTCTGCCAGG	GAAACTAAGG	TCTGGGAAGG	GAGTATGGCT
1601	TGTGGGGACA	CCAGGGGTCA	GGGGAGGGGA	GGGTCCACCT	GCTGAATCAA
1651	GTGGGGCCTC	CTGCCCTCGT	GATTCCCCCT	TGCCTGGTGC	TCAGTGGGGG
1701	TGATGTGAGC	GCCACAGGTG	TGGAGTGCCA	GCCACGTGCT	GAGCGCCAAG
1751	CAAAACAGCC	AGGGTGAGTC	TATGCATCAT	CAGTGCCTGG	GAAGGAAGGC
1801	CACTGCGAGC	AGGGAGTCTG	ACGGAAAAAC	TTGACAGAGG	GAAGGGAGGC
1851	ACCTTGCTTT	ATCGGGGGCG	GGAAGGCCAG	AATAAAATCT	TGCTACTGCA
1901	AGGACCAAGG	AGAGAAGGCC	TGGGCTGGCA	CTAGGGAGGG	ATGTTCCCTC
1951	ACCCTCCCCT	CCTCTGCTTC	TCCCAAAGCT	TGTAAATGCC	CCAGATATGA
2001	GCCAGCCCAG	GCCCCGCTAC	GTGGTAGACA	GAGCCGCATA	CTCCCTTACC
2051	CTCTTCGACG	ATGAGTTTGA	GAAGAAGGAC	CGGACATACC	CAGTGGGAGA
2101	GAAACTTCGC	AATGCCCTTC	GGTAACTGGT	CCAGAGCCCA	GACTTCTGCC
2151	TCCTCTGCTC	CCTACCAAAA	TCCTTTCTGC	ACCAGGACAC	GGCTTCTGCA
2201	CTGGTATCCC	TAAGATGGGG	TTAAGGGAAG	CCCTGGGGAA	GTGAGGTTCT
2251	GAATGATGAA	TTTAAGATCC	TACAACCTCA	TCTGTACTGA	GACCCCCAGG
2301	GAGGATGGGG	AGCAGGAGCA	AGAACCATCC	AGAAGGGTTA	TATGGCATTG
2351	CCAAACCCCT	GCATGGCATC	TCCCATATTC	TCAATTCACC	CGGGTCTCTC
2401	TGGGTTTGTT	AAGGCATGGT	AGATGAGCAT	CTACGTTATG	GAGGGGTGGG
2451	GAGCATCAGA	GCCCTTACTC	CATGCCCTGT	TCCCTCCTTA	CAAAAAATAC
2501	CTGAAGTTAC	CATCACCCCA	GGTTCTTTGT	CCTTTCCCTC	CCGGATGTTT
2551	CTTCTCTCAC	TTGGTCCAGA	GAATGCCAAA	AGGAGGCCCT	AAATTTCTGA
2601	ACTTTCTCTG	GGGGACCTAC	CAGGGTGTAG	TCCTACCAGC	GCCCAGGGTC
2651	TTTCCACTCT	CATCTCCCTG	GAAATGCGAT	GGTGGGTATG	AAACCTTGTC
2701	CCTAAGTAGG	CGCTACACAA	GGTGATCCAT	ACCCACACCC	CAGGAGGCTG
2751	GGGCTGCGGG	TGTCACCTCT	CCCATTCCCA	GACTCCTGGC	AGACCTCCTC
2801	TGGCCAGCT	ATAGGCCAAC	TCACTCTCCC	TCACTCCCTT	GGGGAAACGG
2851	CTGATTCACT	TACCTGGATT	GAGGTCACTG	GCAATGGCTG	AAGTGGAGAC
2901	GCAGGTGGAA	CTGGTTACAG	CCGGGGGAAT	CACCCACTTG	AGTTTGTACT
2951	AAAAGCCCCA	GCCCAGCCCT	GTTTCTCTTG	GGAGGCTCCA	TTTCTGCCCA
3001	GTTACAGTCT	GTCCTCACAG	CTGTGCTCCT	CAGACAGGTG	GTCTCTGCCA
3051	GTCTTTGTGC	CCAAGACTTT	AGGGCACAAA	GTCTGAGGAT	GAGAAGATCT
3101	GCTATTGTCC	TAAAAGATTA	GGATAATGAA	AGCTGTAAAG	GGATATAGCA
3151	AACTAACAAAT	TCCTATGATA	CTGGCATGAG	AGCCTTGAAC	AGTGCCTGGC
3201	ATAGAGAAGG	TGCACCAATA	AATATTTGTT	TCATGAATGA	ATGAATGAAT
3251	GAATGTCTAG	AAAGCTAATC	CCTCTCAGCC	TCTGTTTCCA	GTTCTTCTTT
3301	CAAGCTTCAG	ATTGCTTTGC	CCAACATACA	GCAGACTTGC	AAGTAAGGTT
3351	GGGCATGGAC	TAGCCCTCAA	ATGAGTTGTT	TTTCTTTCCC	TAGCCAGCTC

FIGURE 3A

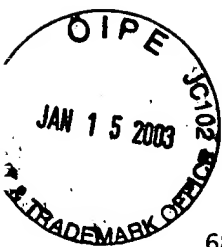


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3401 TCTATTGATA AGTCCGGCTT TCTCTGCCAC AAACAGACCT GATGGAGCCC
3451 CTGCAGGGCT GGTCTCTCT TCAAGCAAGG CTTTAGAGTT GCATTAAGCA
3501 ATTTATCCCC CGTCCACCTC CCCTTCCAGC ATCCCAGGGA TGGCAGAGGC
3551 ACCCATGAGC CCCAGAAGGG ACAGGGGGTA AGATATTGAT GATGATGCTT
3601 TTTCTTGAGG TGTTAGTTGG AAGAGAAAAT CTGCCCAGAC TTTCCAAGGT
3651 ACAAAGCATT GTCTTTGTTG GTTTCAGTCT TGGGTGACAT CCAGGGGACC
3701 GAGTGTGAGG GAAACTATTG TTGAGCAAGA GCAAAGAGCA GGAATTGGTG
3751 CTGGGCAGGA AAGGAAGGCT CATCAGAGCA GGCCAGTGAG TCACCAAATG
3801 GGCCCTAAGT ATTTGAGTTC CCTCAACTGG GAGAAGGAAA GCAAATGCCC
3851 CTCACCCACT TCCAGTCAATC AATCCACCGG CTGTACCCCT TGAGTTTGTA
3901 AGCCCTTGTT CCTACCGCTC CTGAGTTTCT ATGAAAGGAC CTTGAGGTGT
3951 TCAACAAACA GGAAGGGGAT CAACTCTCCC CACCCTGCGT TGACCAATGA
4001 ATTCTTCCCT CCTCTGCTGC CCAGTGAATT AACAGGAGAA AGAACTCCGG
4051 TATTGGAGTT ACCACACATA AAGGATAGTG AGTCAGCAGA GTGCACCCCTG
4101 CAGGAACAAT AGAGCCTTCC TTTTCAAGGA AGTTCTAAGA AAAATGGCAG
4151 CAGGCAGGCC CCACTCGGGT GTATTCACTC ATTCATTTAT TCAACAAATA
4201 TTTACTAAGT GCCCCTGTGC AAGGCTCGAG GTGTACAAAG ATGAACAGGA
4251 GAGCTAGACT TCTTGCCATG CGTGGTGGGG TTTGCTGCCT AGTGGGAGAG
4301 ACAGACAAAA AGCAAGGAAT GCACACACAG GATGCACACA CAGCGGCAGG
4351 AACCAAGGTG CAGTTACCCA GGCCTGGGAT CAGACAGACA GGACTCAGAG
4401 GAGACTTTCC CAGAGAAAAG CCATCTGAGC CAAGGGATGG ATCTGATACC
4451 TCCGAAGGCT GAGCCACCAT AACACTCATA CCTTTAAGCC AAGTCTTATA
4501 AACTCCCCAG GTAAGCAGCT GGCAGTCAGA AGACCTCCAG CTAATGCCCA
4551 GGACAAGTTG ATGAGCTCTC AAGAAAAAGT TCCTGCCTTT TCTTCTCAAT
4601 ATCCCTGGCA CACAGTTCAG TGAATTTTGA ATGAACCAAT GAATGAAATG
4651 AGCAGGATAT GATAATCCCT CTCCAACACG GAATGTCCAA GCCATGCAGA
4701 GCCGACTGGA AATTTTCCCC GTTCCCTTCC AGATGTTTCT CAGCCAAGAT
4751 CAAAGCTGTG GTGTTTGGGC TGCTGCCTGT GCTCTCCTGG CTCCCCAAGT
4801 ACAAGATTAA AGACTACATC ATTCTTGACC TGCTCGGTGG ACTCAGCGGG
4851 GGATCCATCC AGGTCCACCA AGGTGAAGGG GCTCCTTCAG CCAGGCCTGG
4901 ATTGCCACTC CCCTCACCAT TCCTCTCCTC ATCCCCACTC CATCCCTCTG
4951 TGATCCCCAT AAGCTAGTCA TGCTGCTGAG CTTCACTCTC GTTGTCTCT
5001 GCAGGCATGG CATTTGCTCT GCTGGCCAAC CTTCTCTCAG TCAATGGCCT
5051 CTACTCCTCC TTCTTCCCCC TCCTGACCTA CTTCTCTCCT GGGGGTGTTC
5101 ACCAGATGGT GCCAGGTAA GCTCTCCCC TCTGGCAGG CAGGATGACC
5151 CAGACCACAA GGTGGGAGG TGTTGGCAAAG GGGCTCGGG AGATTTTCCA
5201 TCTGCATTCT CCTGGAGTTG TTCTGGTCA GTCTAGGGG AATGGTCACT
5251 GTGAATGTCA TTTCCAGGTC CTCGGTGACC TTGGAGAAAC CACTGAGCCT
5301 CTTTGAGTTC AGTTAGCATT ACCTGTTCCA TCTTCTCCT AGGAATGAGA
5351 GGAAGACTTA GCAGAACAG ATATACCATA TGCTATAACA TGCTTAAACA
5401 GATGTGAGAA ATCACCATCT AACTCCCTGG TTGGTCCCAG CCGGCCACTA
5451 CAGGGACATT TGGACTTCTC TGGTGCTAAG TGAGATGGAG GAAAGCCTGG
5501 TCACAAGGGC TGGTTTCTGG TTCAGGCTCT GCTTATATT CTTATTTCTG
5551 AGTTCATTTT CTCACGTGTC CTGTATGACA ATATTGACCA TTGGGGTAAA
5601 AGCACCTTGA AAAGCATAGA TCATGGTTAG AGTGAGTGGT TGTTATTATT
5651 GTGTTGGAGA AGAGCCTTGG AGGTGCAGGG ATCCATCCCC CTGGGGTCCG
5701 GAAGCATCTC TGGGCCCTT TCTGGTTTCC ATCGGTGTGG TTCAAACCTC
5751 TGATTTTTGC TGGTGGGTG GGGCACCACA GGTACCTTTG CCGTTATCAG
5801 CATCCTGGTG GGTAACATCT GTCTGCAGCT GGCCCCAGAG TCGAAATTCC
5851 AGGTCTTCAA CAATGCCACC AATGAGAGCT ATGTGGACAC AGCAGCCATG
5901 GAGGTGAGA GGCTGCACGT GTCAGCTACG CTAGCCTGCC TCACTGCCAT
5951 CATCCAGGTG AGGGGGCAGC CCCCACCCT GCTAGAAGGG CATCAGACCA
6001 CCCTGCCCT CCCTCAAAGC CTTAGCTTTG ATGCTAAATC TGATTTAGGG
6051 GGCTGGGTGT GGAGGCTCAT GCCTGTAATC CCAGCACTTT GGGAGGCTGA
6101 GGAGGGTGA TCACTTGAGG TCAGGAGTTT GAGACCACCT TGACCAACGT
6151 GATGAAACCC CATCTCTACC AAAAATACAA AAATAATCCA GGCTTGGTAG
6201 TATGCGCCTG TAGTCCCACC TACTCAGGAG GCTGAGGCAG GAGAATCACT
6251 TGAATCCGGG AGGCAGAGGT TGCACTGAGC TGAGATCGCG CCACTGCACT
6301 CCAGCCTGGG TGACAGAGCG AGACTCCGT TCAAAAAAAA AAAAAAAA
6351 AAAAAAAA CCAAGTTAG GGCTCACCTC CTCCCTCCTC CCCATCCCAG
6401 GGCTAAAGTG AACCTTGAAA ATTAACAGTA TCTCCTCATC TGCATGTAGC
6451 AGGACCATAA AAAAAACAA CAGCTGTACC TGGTTAAACT GTCCTGAGCT
6501 TTAAACCTGT AAAAGACTCA CAGCCTCTCT CCATTATCCC GTGGAGAAAC
6551 CCAACTCTCT GCCAGCATAG TCTTGACAGC TGCTAATTTT CTCTAACATC
6601 CCTCACTCCG CTCCAGCCTC CTCTGCTCCA AGCCACAGCA GCAGTTGCAC
6651 AACATAAATT GAGCTTCTGC AAATGGTTGC AAAGGATTCT GCTAGGTTTT
6701 ATGAAGGGAA GCACAACATG ACAGAATGCA AGAGCAAAAC ACAGTCCCAG
6751 AGAGCGCCTT TTCATTCACT CATTCAATCG GTTTTGTGCC AAGAACTAGG
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FIGURE 3B





Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

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6801 CTAAACCCTG GGATACAAAG ATAAGTAAGA AAGAGGTCCA ATTCACAAGT
6851 TGCTCACAGC CCAGCAGAGG AAGGAGCCAT GTCAACAGAT AAATTTGTAT
6901 GCAGTGAGAT AAGCAGCAAA GTAGAGCCAT GTACAAAGAC TGTAGGGACA
6951 CAGAGCAGAG TCACGGAGGA CCTCAAAGAG GAGGTGACAC TCCACCTCTC
7001 TTAAAGGATG AGAACTTAAC CAGGAACAAG GTATACAGAG GATGGTCCAG
7051 GCAGAAGGGA ACAGTGCCTA AAAAFACTGA GGCCTGAGAG AGTGTGATCT
7101 GCGCAGGCAA AGTAAGGGGC TTGGTGTGGC TGGAGGGTAG AGGGCCAGA
7151 AGAGGATGGA AAAGTAGGCA GGAGCCAGAC AATGAGATCT GGGGTCTGTT
7201 CTCTGACAGC GACTTTGGGT CTGATTGGCA GTTTATAAGG ATCGTTTGGG
7251 CTACACAATG ATGAGTGGGA GGTGGATTAG AATCAAGGCA GGGGACCTGT
7301 TGGGAGACTC TGCAGAGGCC CAGGCAGGCA TAATGCAGGC GAAGACCAGG
7351 TAGAGAAAGA GATGGGGCTG GACTTGAAAA GAATGTTTTA CCAGGAGCTT
7401 GGTGATAGAC TGGATGTGGG AGGTAAGGGA GGATGACTCT CAAGTTTTTG
7451 GTTGGGCAAC CAGGTTAATG ATGGTGTCTT TACTGAGAG AGAAAACT
7501 GGGGAGGCAA GACTTTATTT TTACAGATAA GCCAAAGCCA GAGAGGTGAT
7551 GTGACAGAAA GGCCCATGCT CTAAAGGAGC TGAAGGTCTG ATGGCAGCCA
7601 TGTAGAGCAC AGTGAAGGGC AGGTGAAGGT CACAGATGGT CCAATTCCT
7651 CAAGCTACTG CTACGCTAGG ACTGCACGGA GCTCCAGACC TCGGTGTGTG
7701 TGGGGCGGCT CTCTTGAATC GCTGAACCA ATTGGTCTT CGCCACCAAC
7751 CACCTTTTTC CTCCTCTCAG ATGGGTCTGG GCTTCATGCA GTTTGGCTTT
7801 GTGGCCATCT ACCTCTCCGA GTCCTTCATC CGGGGCTTCA TGACGGCCGC
7851 CGGCCTGCAG ATCCTGATTT CGGTGCTCAA GTACATCTTC GGACTGACCA
7901 TCCCCTCCTA CACAGGCCCA GGGTCCATCG TCTTTGTGAG TCTGGGGATG
7951 CACCCCTGCC ATTGGAGCAA GGCTCCAGCA GACACATGAG GAGGATGTAC
8001 TGTTTTAAGA TGTCGTGAGC TCCTCATTGC AAGGGCTGCG TTAGCTGTTG
8051 TTCAGAGAGG ATTCTGAGGG GGTTTCTGTC TTGGGAGGGT CAAAGTCATG
8101 ACTCACAGAG GTTCTTGTA GTTAATACCT GCAGAAAAGA GCTGTACATT
8151 CTCCGCCAGT TCCCCATTCT AGTGCCTCAA CCCCTCCCTG CCTGGAAAGT
8201 CTGCCTTAT GTCTAATCTC CATCCCTCCT CTTTCAGCCC AAACCTCTCT
8251 AAAGAAAAAG AAAGCATTCC TTTTCTAGCA CAAGTTCCCC ATGTGCCTTT
8301 TGGGAAAGGG CGGTGGGCGA CGGGACAGGG TTCCTGATCA GGGTTTTAAT
8351 TCTGCTTTGG TGTGCCTCCA TTAGCTTTGA TGGCATCCCT TCCCTGGGTC
8401 AGACACCCAA AGGTGGGGTA TTATGGGAAG AAGGGGTGGG AGCCTGTGAG
8451 CATGATGCTC TTTCCCCCAG ACCTTCATTG ACATTTGCAA AAACCTCCCC
8501 CACACCAACA TCGCCTCGCT CATCTTCGCT CTCATCAGCG GTGCCTTCT
8551 GGTGCTGGTG AAGGAGCTCA ATGCTCGCTA CATGCACAG ATTCTGCTTC
8601 CCATCCCTAC AGAGATGATT GTGGTAAGGA CCTTGTTTCA AGCTGGGATG
8651 TTGGGGGGCC AGGCTGTGAG ACGAGGAAGC CCCTACCTTT CCTCACCCCA
8701 TCCCCTCAAC TGGCAGCCAG TGGGACAGGA AGTCAGTTGT GAATCCATCC
8751 CATCCCCCGT ATGTGGCGTT TCCTCTCTTT CTAAGTCTCT AATAATTCCC
8801 CCTAAGGAGG CAGGGGAGTG GGATTCAGGG TCCCCAGAGA AAAGGGAGAC
8851 TTGAGAGAGA CGCCTGCCTT GGCCCCACCT TAGGGCCAAT CCCCATTTCT
8901 CACTCTGGG TTTGCGAGTG GTGGTGGCAA CAGCTATCTC CGGGGGCTGT
8951 AAGATGCCCA AAAAGTATCA CATGCAGATC GTGGGAGAAA TCCAACGCGG
9001 GTGAGTCCAG GTGGCCGAGA AGCCTGGCCC ACCCGCACCT CATGCCCCAC
9051 TAAGGCCTGA GCTCGGAGAG GGAGACAAGA TGAAGTCTAT GAAAGTGCAG
9101 TCGAAAAGTG ATGACACTGA CCATGTATGA ATTATTACTA TTACCGTTTC
9151 CTGAGAAGGG CCGCACAACC AGCCAATGTA GGCTATTTTA TGAGAAATGA
9201 GTCTTAACTG CCACACTCCC CTTATAAATC TCATTCAACT GATGCTGTTA
9251 AACAAAGCCT CTCTGAACAG CCGCTTGCTG GCTCTTTGCC TTGCTCTAAT
9301 GCATTGGTTC TTTGTCCATG TAGAAAAGGA ACTATTAGGT TCAACCAGAT
9351 TCATGAAGCA TCCACTCTGT GCCAGGCACC ATGCTGGGCC CTGGGAGGAG
9401 AGGGGTGACG CTTGTCTCTG AGGGTTGGAA CAGGCAAGGG AGGGAAGACC
9451 ACATAGCACC AAAGGTCTAG GGGTCTGTGG ACTCGTGAGC ATACAGGGTT
9501 CAGAATCTGG GAGTTAACAA ACGAGGCCCT ACCACATACT GGCCCGGGGA
9551 CTTTGGGCAA GTTAGGTTCT CTCAGCCTCA GTTTCTCTCT TTGTAAAACA
9601 GGAGTGATGG TCCCTACCCT ATGGGGTGGT GCTGAGGATT CAGACTGGAT
9651 GGGATAACTT AGGCAAAGAT CCCGGCACAC CATGGGGGCC TGGCTGGTCC
9701 CTGTGGGCTG GTGAAGGACT TGGCTGCCCT CCCCCTCAC ACCCTTGGGT
9751 TCTGCCTCCT TCCTGGCTCC TCGGCAGGTT CCCCACCCCG GTGTGCTGCTG
9801 TGGTCTCACA GTGGAAGGAC ATGATAGGCA CAGCCTTCTC CCTAGCCATC
9851 GTGAGCTACG TCATCAACCT GGCTATGGGC CGGACCCTGG CCAACAAGCA
9901 CGGCTACGAC GTGATTCTGA ACCAGGTAGC TCTGGCCACC CCCGGCAGGA
9951 CTGGGCAGGA CAGGTCAACT CAGGCCTGGC ATGACATATC TTGGGTGGGG
10001 AGATCATTGG GCTGAGGTGA GGCAGGCTGC CTCGAGTGTG GGGGATAGGG
10051 GGTCTCTGTA CCCTAAGAGG CTGACCTCCT CTTGACTGGG AATGTGTGAC
10101 TTTATAGCCA CTGGTCACT CTCAGTCTT AGGCCACAG TCCAGCTTGC
10151 ATGCCTGACT GCACCTGGTC CCCGTGCCCC CCAGCCCCAC ACTGGCTTCT
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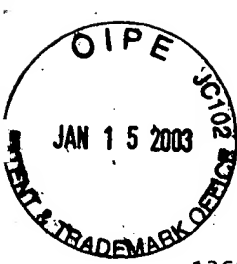
FIGURE 3C



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

10201	AATCCTGTCC	CCTCCCTGCA	GGAGATGATC	GCTCTCGGCT	GCAGCAACTT
10251	CTTTGGCTCC	TTCTTTAAAA	TTTCATGTCAT	TTGCTGTGCG	CTTTCTGTCA
10301	CTCTGGCTGT	GGATGGAGCT	GGAGGAAAAT	CCCAGGTGAG	CCTTGTTCTA
10351	GGGGAGTTGG	GGGGAGGTGG	TAAGAGAAACA	GTTGCCCCAA	AAAAGCCTGG
10401	GCACTGCAAG	CCAGGCCAGC	TCTTCTCCGA	CCCCTTCTTC	CCGTACTTAG
10451	TCTCCACTCC	ACCAAAGCCA	TGGATTGGAA	ATAAATCAAG	AGCAAAAAAT
10501	TCACACCTTC	CCTCTATCCC	CAACTCTTTC	TCGGAATAGG	TGGCCAGCCT
10551	GTGTGTGTCT	CTGGTGGTGA	TGATCACCAT	GCTGGTCCTG	GGGATCTATC
10601	TGTATCCTCT	CCCTAAGGTA	AGAGCCCAGC	CATCGAGCAG	AAGTCAACGA
10651	AAGACTCCAA	TAAGAAACAAT	CCCTGAGAGT	TGTGTGGCAC	TTTACGGACC
10701	ACAAAGTGCC	ACTGTTGTCA	TACTTAGTCT	CAACCACAAA	CTGTGAGGTA
10751	GACAATGCAG	GTTTTATCCT	CCCCATTTTA	CAGGTGAAGG	AAACTGAGTC
10801	TGAGAGTCTA	AGTAACCTTG	TCCATAGTGA	GGCAGCTTAC	AGCGCAGGGC
10851	TGGTCCCAAA	CTCCAGCCTT	CTGGCCTCAG	AGTCTAATCC	CTAGGCCAAC
10901	TTTGCACCTA	CCCACGAGTA	CCAGGCTCTT	ATATAGCCCA	GCTAGGAGGG
10951	CTCTAGGCAT	CGCTCATTTA	GAGATGAGGG	AAGAGAGATA	GGGAAAGGAT
11001	GGGGCCAGGA	AGGACCCCAT	GGCTCTAACG	CCAGCACTTT	CCAAACCTAA
11051	GGTCGAATGC	AGAGATTTGG	GGGATCAGCC	AGGGGAGGTG	TTCCAGAACT
11101	CCGTCTCTGT	CCTGCCAGGC	CTTGGGGTCG	GGTATGCGCA	GGAGGGCAAA
11151	AAGAAGGGGA	GACCCCTGGG	TCCTGGAGCA	ATGTTCTGCT	TCTCTAGTCT
11201	GTGCTAGGAG	CCCTGATCGC	TGTCAATCTC	AAGAACTCCC	TCAAGCAACT
11251	CACCGACCCC	TACTACCTGT	GGAGGAAGAG	CAAGCTGGAC	TGTGTAAGTA
11301	TCGGGCAGCC	TCTGGGTACT	GGCCATGCCC	CTGCCCTCTC	CTCCAACCCC
11351	ACAGCCCTGT	CAGCCCTGTC	CTAACAATGA	ACCCTCTAGT	CTGCTGCTTC
11401	CTAATTAGCA	TGAGATGAGT	GGTTAAAAGT	CCGAGTTTCG	AAGTGAACA
11451	TCCTATGTTT	AAACCCCTAAC	TCAGCCATCT	GCTGGCTCCA	TGGCCAATAG
11501	CAAGCCCCCT	AACCTTTCCC	AGTCTTGGTG	TCTTAACTGG	GCAAATGGTT
11551	ATTTTATGCT	CTCTGCCTCC	CAGGGTTTTT	TATGAAGAAG	AAGCAAGGTA
11601	ATACAAGTAA	ACATGTTGTC	TACATCGTAT	TTTATACTCA	ATAAAGCTTA
11651	GCTATGACTA	CTTTATGACA	TACAGCTTTA	AAAAACAAAA	GGAAATAGTT
11701	TGTATTTTAA	AAAAAAACCT	AGAACATAAA	GCCAGAGGAC	CAAAATCTTG
11751	AGCAAGTTAC	TAGACTTCCC	TGGGGTTCTA	TTTCTCATC	TGTAAATGGG
11801	GGTGAGACTC	ATGCAGTCAT	GGTTGCGTCA	AACGCTGGTT	CCGAGGATTA
11851	AATGAGATCC	CAGTGGGAAA	ACACCGCATG	AGCGCAAAAC	TTCTGCAAAC
11901	ATGACTTATT	GTCTTGATTA	GTCAACACT	CCACCGCATC	ATCCGCTGGG
11951	CATAGTAATG	AAGGCCAGTG	TGTTTTGACG	ACACTGCCTT	CTCTCCATTT
12001	AAGCCCCACC	ATAACCTATG	GGAGAGGATT	TACTAAACTT	TCTTAACGGT
12051	GATGAAACCA	AGGCTCAGAA	TGGTTAAGTA	AATTGTCAAA	GGCCACAGAG
12101	GTAGGGAGTG	GTAGAGTCTG	GATTAATACT	CCAAGTCCTG	GACTCCAGAC
12151	CTCTAGGCTG	TACTGTCTCA	TAGGGAAGGC	AGTCTCACCC	ACCTAGGGCA
12201	GAGAAGAAAA	TCTTAAAGC	CAGAGAAGTG	AGTGGCTCAT	CTGTGGTCAC
12251	CCAGAGAGAC	AGTGATGAGG	ACAGGGAGAA	AAATTATACC	TCAGTTCCCA
12301	GCCCCAGGAT	CTGCTTTGAC	CATAACCCAA	CAAGCCCCCG	CTATGGTGGT
12351	ATTTCCCTTAG	GTTTCATATG	CGGCTTTTGT	TTCCATTTGA	TCTTCACAGC
12401	AATTCTCTAC	AGGAATCTGG	GCAGATTTAT	TTCTTTTAGA	GGAATTTCCA
12451	GGTCTTAAAA	TCTATAGGGG	GCAACTATCA	AAACTTCACC	CAATGTTGCC
12501	CCCTACCCAC	ACACAAAACC	AGGCCCCCAG	CCGATCAGAA	AGCACTGCTG
12551	AGCTCCTGTC	AGGGCCACAG	CAGCTCGCTG	TGAGACAGAG	AGAGGGAACT
12601	CACATTTATT	GATCACCTAC	TGAGCATCCA	TCACTAGGCT	AGGACCGTCA
12651	CATTCTTTAA	CTTTTGAATC	CTTTTCATGAG	GTAGGCATTA	TTATTCTCTT
12701	TTTGTTCAC	ATAGCCATTA	AAGAACAAAA	TTTGGGGCTG	GGTGTGCTGA
12751	CTCACACCTG	TGATCTAGCA	CTTTAGGGGG	CTGAGGCAGG	AGGATCGCTT
12801	GAAGTCAGGA	TTTCAAGGTC	AGCTTGGGCA	GCTTAGCGAG	AGCCGTCTCT
12851	AGAAAAATAT	AAAAGTTAGC	TGGGTGTGGT	GGCACGTGCC	TATAGTCCTA
12901	ACTATTACAG	AAGGTTAGGC	GGGAGCACAA	CTTGGGTTCC	AGGGTTTGAG
12951	GCTCCAGTGA	GCTGATCTTG	CCACTGCACT	ACAGCCTGAG	CAACAGAGCA
13001	AGACCCTGTG	ACTCCAAAAA	CAACACAAAC	AACACATTTT	GAACCCAAAC
13051	AGATCTGACC	CAAGATGCAT	GCTCTTATAG	ATGCCACCTC	CCTGTGTGCT
13101	GGGGCTTCTA	CTAAAAACAC	AGACAAGATC	AGGCAACCAC	AGTCAATCTA
13151	AGGGAAAGAG	GAAAGTGTAA	CCAAAGCACA	AATACATAAA	ATATTGCAAA
13201	AATGCTATTT	AAAGAAAAAA	AAGAGAAGAG	AGGCTCTGAG	GTTGTAATAA
13251	CAGAGAATGG	CCTTGGCTAA	TCCAGGAAGA	CTTCCTGAAA	GAGGTTGTTT
13301	TTTCCCCAGG	TCTGCTTTTG	ACATCTCTCT	TTTCACAGTG	CATCTGGGTA
13351	GTGAGCTTCC	TCTCCTCTCC	CTTCCTCAGC	CTGCCCTATG	GTGTGGCAGT
13401	GGGTGTCGCC	TTCTCCGTCC	TGGTCTGGGT	CTTCAGACT	CAGTTGTAAG
13451	TGATAGCTTC	CGCCCTCCTA	GGCCACAGT	CGGTTCCCTG	GGCCAGCCCG
13501	CAAAGGGCTT	CCATGCCACG	GCCTGGCTTA	GTCACATGTA	CCTTCCACCT
13551	CTGGGCCTGG	CAGTGAGGCT	GCTGCCAGGC	CCAAAGAGAG	CCCAACCCAG

FIGURE 3D



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

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13601 CCAGGACTGT GGGCACAGTC TGGGCTGTTT GACTTCCCAT ATCTTGAAAA
13651 CCCCAGAGAA AGCCAGCATA CTCTTGCTGG GGATGGCTGG GGAGAGGGCA
13701 GTGGCAGAGA AAGGAGGGCA AGGGCAGGTG GTGAGATTCA ACATCCTTCC
13751 AAAGACATTG CCAGAACCCC AAACCAAATG GGACCCACC CCAGGAGAGC
13801 GCCAGGGTGG AAGACAGAAG CTGTGTTCTA CACACTGGGA GTATTACAGA
13851 GAAGGGGTCT TGGCCAAGGC AGGGAGTACG CTGAATGTTG GGGGAATCCT
13901 ATCTTCTCTT CTTGAGAACT CAGAACAAGG AAATGATGAC TTCAGGGCGA
13951 CTCCCACCAC TTTCTCCACC ACTTCTCTCC CCGTCCCTGT GGTCTGGGAG
14001 CTATGTCAAG GACCTGCCTG TCATCCTCAT AGTTATAGGA GGCCACAGGC
14051 CACCAGACAT GTGTCTCCAG TGCAAAAAGA CAGACACAGC AAGTCTGGGG
14101 GTGAGGACAG GACCCCATCC TACCTTGGCT CTGCCCCCGC CCCAGCAGGG
14151 GCACCCCTCC AGGCCATGTG GCCATTAGCA TTCTCTTATG TTTTCTCTT
14201 CCTGCTTCAT CCAGTCGAAA TGGCTATGCA CTGGCCCAAG TCATGGACAC
14251 TGACATTTAT GTGAATCCCA AGACCTATAA TAGGGTAGGT AATTCAAGCT
14301 TATGACCTCC TTCTTTTGCT CTGCACCACC CCAAGAAGAG GTTGCTTTTT
14351 AAAGCCAATA AAGACATTTT TGCAACTTGA GCTCAGTCTC CCTGTACAG
14401 GCCCAGGATA TCCAGGGGAT TAAAATCATC ACGTACTGCT CCCCTCTCTA
14451 CTTTGCCAAC TCAGAGATCT TCAGGCCAAA GGTCATCGCC AAGGTAAGGC
14501 TCAGTCCCTG GCGACCAGAG GCTCTGGACA GAGAGTGGCC GGAAAATGGA
14551 AGCAGAAGGG CGGTGGGAGC TGAGAATAGG CCACTCCCAT AGAGGGTGGA
14601 GGTCAAGATT GCTGTTGGCT CTCTCCCTGC AGACAGGCAT GGACCCCCAG
14651 AAAGTATTAC TAGCCAAGCA AAAATACCTC AAGAAGCAGG AGAAGCGGAG
14701 AATGAGGCCC ACACAACAGA GGAGGTCTCT ATTCATGAAA ACCAAGGTGA
14751 ATGAAGGCCA GAAGCAGCCC CGTGCCCTGC TCTCCTGCCC ATTCTGATAC
14801 TGCCCCCTGT TACTCATGGT ACCCTGGGGG CCCCCTTCC CACCCTGACA
14851 GGCAAAGACA GAAAGTCTCT GGGAACACTG CCTGGTGGCC GCTGGGCATT
14901 TTTCTTCTTT TTTTCTTTT TCTTTTAGA GATGGAATTT TGCTCTTGT
14951 ACCCAGGCTT GAGTGCAATG GCCTTATCTT GGCTCACTGC AACCTCCACC
15001 TCTGGGGTTC AAGCGATTCT CCTGCCTTAG CCTCCCAAGT CGCTGAGATT
15051 ACAGGTGCCA CCACACCCAG CTAATTTTTG TATTTTTAGT AGATATTGGG
15101 TTTCAACATG TTGGCCAGGC TGGTGTCAAA CTCCTGACCT CAGGTGATCC
15151 ACCTACCTTA GCCTTCCAAA GTGCTGGGAT TACAAGCCTG AGCCACTGCG
15201 CCCAGCCTGG GCATTTTTCT TCTTGATGA GGTGCTACCA TCTCCAGGG
15251 AAGCCACTGA ACCCCCAAGG CCCTTCTCCA TTTTCTGGCT AAGATAGGAC
15301 ATGGCCCATG GACTTTTGAA CAACCCAGAG GGGGAACAGC AGTGAATTC
15351 CTGGGGAACC CAGGCTAGCA AGGGCTAGCA AGGCTGGGGT GGCCATGGCA
15401 GTAATCCTTG TAATCCCAGC ACTTTAGGAG GCCGAGATGG GAGAATCACT
15451 CTCATGAGTT CAGGAGTTG AGACCAGCCT GCCCAACGTG GCGAAACGCT
15501 GTCTCTACTA AAAATACACA AAAATTAGCC AGGCGTGGTG GTGGGCACCT
15551 GTAATCCCAG GCTCTCAGGA GGCTGAGGCA CGAGAATCAC TTGAACCCGG
15601 GAGGCAGAGG TTGCAGTGAG CCGAGATAGT GCCACTGCAC TCCAGCCTAG
15651 GCAACAGAGG GAGACTCTGT CTCAAGAAAT AAAGGAGCTC AGTGTCCCCG
15701 GAGGGGCTTT CTCCCAGAGA GAGTGGGCTT GAGGCTTCAG TGCTCTCTT
15751 GGCTGGGTCC TCTGACTTTG TCTGGGTTGT AGGAGACCAA GTTTGCAGGC
15801 CCTGCCTAAG AAAGGGCTTT GGGAGAGGCC TCTCTGGTGG AGCTTTCAGG
15851 GTCTGTGTTT ACCATCACCG AGGCGAGTTA TTCCCCTACA CCTACACCCT
15901 CCATGCCCCT GCTTCAGTCA CAGCAAGGTC TGCTCAGTC TGGTGGTCCC
15951 TGACTCTGCC CACTGTCCCC ACCCTTCCAG ACTGTCTCCC TGCAAGAGCT
16001 GCAGCAGGAC TTTGAGAATG CGCCCCCAC CGACCCCAAC AACAACCAGA
16051 CCCC GGCTAA CGGCACCAGC GTGTCTATA TCACCTTCAG CCCTGACAGC
16101 TCCTCACCTG CCCAGAGTGA GCCACCAGCC TCCGCTGAGG CCCC CGGCGA
16151 GCCCAGTGAC ATGCTGGCCA GCGTCCCACC CTTCTGACCC TTCCACACCC
16201 TCATCCTGGA CATGAGTGGA GTCAGCTTCG TGGACTTGAT GGGCATCAAG
16251 GCCCTGGCCA AGGTGAGGCC CTCGGGGACA GCAAGCACCA CCCACTCCAC
16301 CCCCTCCGCT CTGCTCTCCA CATTCCCTTT CCGGGAGCC CTCATTTTCA
16351 GAAGCTGAGG GAGGAAGCTC ACTGGGGAGA CTAACAGCTC CTAGGAATCC
16401 CTCCTTTCCC CAGACGCCAC CAGGTTGAGA CATTCTCCAC AGAGCAGGCC
16451 CAGACGGCCC ATGACAATGA GTGGCGGGAC AAGTCTACCA GAGTTTCAGG
16501 CCCCTGTGCT CCCAACACCC CCAGCAGTGG CCATCCCAAG TCCCTCTCAG
16551 CCATCGGAAA CCCACCCAGG TTCTCTGAGG AGGGTCCAGT TTGGCTCCTG
16601 GTTCATGATC TGCTGCCCTT GTCCCTCATT CACCAGCCAC CCTAGGACAG
16651 GAGAAGAAAT AATACCAAGT CCCCACACCA TCAGGCCAAA CAGAGAGCCC
16701 ACGGGACACC TTGAATGAAT GTATCCATCT GATAACTTTC CAGCAGCCAC
16751 CGCCAATGGC GGGAGTCAGT AAACCTCAGA GCTGGCTCAG ATAGAGGCAA
16801 GCCAGGGGAA CAATGGGCAC AGAGAGTGTT CGGACTGCCT TCACCATCAA
16851 CCAGGCGCAG GCGAGGCCCC ATACCCAGCC TTGGGCTCA GCCGGCTTCC
16901 TTAGCCAGCA TCTGGAGTCC AGGCCAGCCT TGGCTGAAGC TCTAGACTCC
16951 CTGAGCCCTC ATCCTCCCCT GCAGCTTCTG TCTGAAGCCA CAAAGAAGTC
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FIGURE 3E



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

17001	TGAGAATCTA	AGCTACTGAA	AGAAAAGATC	AGCCGGGCGT	GGTGGCTCAC
17051	TCCTGTAATC	CCAGCACTTT	GGGAGGCCAA	GGCAGGTGGA	TCACAAGGTC
17101	AGGAGTTCAA	GACCAGCCTG	GCCAACATGG	TGAAACCCCG	CCTCTACTAA
17151	AAATACAAAA	ATTAGCCAGG	TGTGGTGACG	GGCCCCTGTA	GTCCCAGCTA
17201	CTCGGTAGGC	TGAGGCAGAG	AATTGCTTGA	ACCCAGGAGG	CGGAGGTTGC
17251	AGTGAGCCAA	GATCGCGCCA	CTGCACTCCA	GCCTGGGCAA	CAGAGTGAAA
17301	CTCCACTCTA	AAAGAAAAAA	AAAGAAAAAT	TCTAGCCCCA	CAAGAAGGGG
17351	CCATGGTGAC	TTTAAAGTGCC	CGCCACGTTG	GCAAAAGTCC	ATTTCCGCTC
17401	CACTTCCCAG	AGAAACCGTC	AGCCAACACT	CCAGGGAGAA	GTGGTGTGCT
17451	TTGCTGCTAT	TTTTGTCTTT	GGCTGCTGGG	CTCTCAGGGT	TGCTTATTTG
17501	TTTGGCTTCC	CCTCTGAAGT	ACGTTTTGTG	AATCACTTTT	GAGACCCACT
17551	CAGAACATTC	CTTTCCTTTT	GCCTCCCTAC	CCCAACAACA	CTTCTAGCTG
17601	AGCTCCACCT	ATGGGAAGAT	CGGCGTGAAG	GTCTTCTTGG	TGAACATCCA
17651	TGGTAAGAGA	AAGAGGACAT	TTAGGGACTG	AAAGACTGGC	AAGGAGTGTG
17701	GGGTAGGAAC	AGGTTGGTGG	GGTCTGAATA	GTGAGGAGGT	TGGAACGAG
17751	AGCACGTCAG	TTATCCCCAC	AAGCTGCTGC	CTGCTCATAA	AAGCTTCAGG
17801	TACAAGTCCA	AAGAGACTGG	TCAGATTGCA	TAAACATCCT	AGGGGCCCTA
17851	GTGACAGAGT	GGGGGTGAGG	AGGTCATGGA	GTTACAGAAG	GACAGCTAGG
17901	ATTCTAATCT	ACCCATAAAC	TAATTTGCCA	CGTATCCTTG	GCCGAGTCAC
17951	TTTATCTCTC	AAGGGATCTA	TTTCTACCTA	TGTAAAAACGA	GAGGGTTGAC
18001	TAGATGGATT	TGGGGATCCT	CTCCCAATCA	GAAACTCTGT	GAATCGATAT
18051	AGGCATAGAG	CACACGGTAC	CCTAATTCCC	CAGGGAACAT	ATAAATATGC
18101	AGTTTTGTAG	GCATACAGCC	TCCAAAGGGT	GCATATACAC	AGCCTCAAGG
18151	ACGTGGCCAC	AGGGCAGCAG	ACATTTACAT	GACTAGCATG	TACGCAAAGT
18201	GCAGAGATGT	GGGAGCAAGT	GCACACAGAC	ACACAGGAGA	ATGTGAAGGG
18251	GCACATACAC	ACACACCCAG	CTCCCTGCAC	TGGGTGAGAC	CCCCTCCAGC
18301	AGGGCTGCAG	TTCCCAAGCT	CCGCATGGCC	ACGTTGCGGG	AGAGAATCTG
18351	CAGTGGCAAT	GACCTGCTAT	GATATGTTCT	GGAGTTAGAA	GCAGTGGATT
18401	CTCCCCAACC	TCACTGGACA	CCCCCTTAGG	AAACCATCTC	TAGGATTAAG
18451	AGTAATCCAC	ACAAACTTCC	AATGCCACAC	ATTGGAAGTT	GCTGGAAGGG
18501	TCTGGGAAAA	CAAGAGGAAG	GATGGGTCCT	TGGGGGATAG	AACTGGCAGC
18551	GGCCTCTTCA	AGGATGGCTT	AGGCTTTTCC	ACTCGAATCA	CCACAAAGTA
18601	CTGACTCCCT	AAATCAAACCT	GCTTCTTCT	GCTCTGGGTT	GAAACTTCAG
18651	CATCCTCAAG	TTTCATGTTGC	CCTCTGCCGT	CCAGAACTGA	TATTGCACTG
18701	CCAATGCCAT	GGCCCTCAGA	TACAGCAAGA	GCTGGGACCT	CAGGCCTCTC
18751	CCATCCCTGC	TCTGGTCTCA	CTATCTTCCC	CACCCCCAGC	TCCAATCCAC
18801	AATGGCTGTT	ATCTTTCTGA	AGGTGATCTT	TTCTCCTTCT	AGCCCAGGTG
18851	TACAATGACA	TTAGCCATGG	AGGCGTCTTT	GAGGATGGGA	GTCTAGAATG
18901	CAAGCACGTC	TTTCCCAGCA	TACATGACGC	AGTCCTCTTT	GCCCAGGCAA
18951	ATGCTAGAGA	CGTGACCCA	GGACACAACCT	TCCAAGGGGT	AAGGTTCTTG
19001	CACCTGGGGA	ATCCTAGGCT	CCAAGGCACT	GAAATAGCAG	GACCAAGAGG
19051	CATTATTAGA	AAGAACACAG	GAGAAGGTTT	AAGTTCCAAT	ATCAAGTCTG
19101	CCATTTCACT	TTTCTGAATC	TGTTTCTTTA	TCTATAGAA	GAGCACCATC
19151	AACTAACATT	ACCTACCTCT	CTGCATTTTT	CTTTTATTTT	GTTTTAGGGT
19201	TAAATGATAA	TTACATCTTT	TGTGTCACTT	GAAAGCACTT	TGTGTATTGT
19251	AAAAATTCTT	TATCAATATA	AGTTTTCTGG	TTGCACAAAC	ACCCAAAGCA
19301	TAGTAGAGCA	GGCCCACTCT	GCTGGCATCG	TTCCCTGCCT	CCTCCTCATC
19351	TCTTTCTAAA	GGGGGCTTTC	GGGAAGGGAG	GGGAGGGGAG	TAAGCCTACC
19401	CATTTTAACT	TACCGGAGCT	TAGAGATTTC	AGGCTGGTGA	GGGATAAAGA
19451	GATTGGGTCT	GAGTTTTGTC	TCAGCTTTTT	GACATTTAAT	TTACTAGCTC
19501	AGTAAGTCAT	ACAAATGGGA	TACAAATAAC	ACCATCTAAA	ACTCCAGAAG
19551	ACTGGGGAGT	CAGAAAAATC	CTACCTCCTT	GGGGTCCCTG	CCCAGATCCC
19601	CAGTCATCTC	TAGCCCTCAG	GGTCCCCTCC	CAGCTCAGCT	CCTGCCCTTG
19651	GCCTCCCAAG	ACTCTTGTTG	TGCCCCAGCC	CTGGGTAAAA	ACCTCCCCTG
19701	CCCTCTGTGG	GTCAATAAGAA	AGGCTTTTTCT	GGCCCTAGAG	CAATGATTTG
19751	CTCTTTGCCT	TAAGAGACTG	ATGAAGGTGA	AACCATCTGT	TCTAAGTGCT
19801	GAAAGACTGC	CCAGGAACAC	ACAGGGCGCT	GGCTCCTGCC	CTCCATGCCT
19851	AGAGGGAAAC	CCTGGGGAAA	CAACGGGCTT	TCCTGCTTCG	TGAAATTTGT
19901	CCGCAGAGCA	AAGAGGGAGA	TTCTGGAGGA	AGCTGCATTA	GTTGTTAGTG
19951	CCCTAATCAT	GTTACGCTAC	TCTAGTTGGT	ATGTATACTT	GATTAGTCAT
20001	AGCACTTATA	AATAATTTAT	ATTTTATATA	ATATATACTT	ACATATTATA
20051	GACCATTACAC	AGATACAAAT	CACACACATA	AACACACACC	TTTTCAACAG
20101	CATTGTGAGG	GACAAAGCAG	GCAAAGTGAG	GCTGGTTATC	AGACTTTAAC
20151	AGATTAGAAA	ATATAATCCC	AGGAGGACAG	GAATTCCTCA	AGGTGAGGCA
20201	GCTAGCCAAT	AGTTTTTCTA	AGCTGAGTAA	AACCTTCCCT	GCCTCTAACG
20251	GCCCACAAAG	GAGGGAAAGAC	CGCGATACAC	ACCTGTCTGG	TATAAGGGGG
20301	AAGACCACAG	CCGTGCTGTT	TTTGTGAGGG	AGGTAAGGGA	AGGGGCAAGA
20351	GGATAAGTCA	TGTGTCAGGA	AGCAGCGTCC	AACCAGAGCC	GGCCACCTGT

FIGURE 3F



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

20401	CCCTTTTCCT	GCCACCATGC	ACCAACTTTG	CTGTTTCAGTC	ACTGAAGCTC
20451	ATTCTGCACT	GGCTTCCTCC	CTTCCAGGCT	CCAGGGGATG	CTGAGCTCTC
20501	CTTGTAACGAC	TCAGAGGAGG	ACATTTCGAG	CTACTGGGAC	TTAGAGCAGG
20551	TGAGCTGAGG	GAAGGGGCTG	TGAGGGTGGG	AGCAGGGCGA	AGAGGGGAAG
20601	GATGGGGTGC	CTGTCAAATA	CAAGGCGTTC	ACTCAGCTGT	CTCACCTCCA
20651	GCCCAGAGCA	GTCACATTCA	AGGCCACAAA	GATTTGTGGT	CATCTTTGTT
20701	TTTTTCTTT	TCCTTTTCTT	TTTTTTTTTT	TTTTAATTG	AGACAAAGTC
20751	TCACTCTATC	ATCCAGACTG	GAATGCAGTG	GCATGATCTC	AGCTCACTGC
20801	AACCTCTGCC	TCCCGGGTTC	CAGAGGTTCT	CCTGCCTCAG	CCTCCCGAGT
20851	AGCTGGGACT	TCAGGCCTGC	GCCCAGCTAA	TTTTTGATT	TTTAGTAGAG
20901	ACAGCTTTTC	ACCATGTTGG	CTGGGCTGGT	CTCGAACTTC	CGATCTCAAG
20951	CAATCTGCCT	GCCCTCGTCT	CCTAAGTGCC	TGGATTACAG	GCATAAGCCA
21001	CGATGCCTGG	CCTTTGTTTT	CATTCTTCTC	ACTCCCTGAA	AGGCATCGTG
21051	GGGAGAGGGT	GAGTCACTGG	ACCAAGTCCT	AGAGAACCAG	TATCTATTCT
21101	TATTTCTCAA	CACATCACCC	ACGTGACCCT	GAGCAAGCCA	CATACACCCT
21151	GGGCCCTAGT	TTTTATCATC	TGTGAAATTA	GGGGAAACAT	AGGTAATACC
21201	TGTCCCATCC	ACCACACAAG	ATTGGCAGGG	CAGTCACTTG	TTCTTTCATT
21251	AATTGACGAG	GTATTTATGG	CGTACCTACT	GTTTGCCCTGA	CACAGTTCAG
21301	GATGGGCACA	TAGCAGTGAG	CAAAACAAAG	GCCTCTGCCT	TTTAGAAACT
21351	TACGTTATGG	TAGAAATAGAT	GGATTTNNNN	NNNNNNNNNN	NNNNNNNNNN
21401	NNNNNNNNNN	NNNNNNNNNN	NNNNNNGTCT	ACAAATGAAT	TATTATTGCA
21451	TGTGGACAAG	CCTTAAGAAC	TAAAAAATAT	GTGGCTGGGT	GCAATGGTTC
21501	ACACCTGTAA	TCCCAGCACT	TTGGGAGGCT	GAGGTGGGCG	GACCACCTGA
21551	GGTCAGGAGT	TTGAGACCAG	CCTGGCCAAC	ATGGCGAAAC	CCCGTCTCTA
21601	CTAAAAGCAC	AAAAATTAGC	CAGGCGTAGT	GGTGCATGCC	TGTAGTCCCA
21651	GCTACTCGGA	AGTCTGAGGC	ATGAGAATCA	CTTGAACCTG	GGAGGCAGAT
21701	GTTGCACTGA	GCCGAGATCG	TGCCACTGCA	CTCCAGCTTG	GGTGACAGAG
21751	CTAGACTGTC	TCAAAAACAA	ACAAAACAAA	CAAAACCTAA	AAGATATGTG
21801	GATATGAGGG	ATCACCATCC	CCATAGGGCC	CCTGGATTAA	CACCACCCCA
21851	CCAATTGCCCT	GAATTAATAAG	AAACCAGATG	ACTAGGTTTG	GAGAAATCTG
21901	GCTTTGGGTC	TATGAGAAGT	AGTGTCTCTC	TTTGTGCCTC	TTCCCATTCT
21951	TTTTGACATT	GAGTCCCATG	GTGCTCTGAA	TCCGTCTCTC	ACAGTGCTGA
22001	TGGCAGGTGG	GACAGATTAG	AAAATAGAGC	TGGAGCCACA	GAGATTTGGC
22051	AGACTGATTT	CGGTGCCCTC	TTGGAATCTC	CAGCACATTC	CAAAAAGCCT
22101	GGATAGGACC	AAAATAGCTT	ATCAACGTGA	GAAAGGACTT	CAGAGCTTGT
22151	CTACTGCCAA	CCCTCATTTT	ACCCAATGAG	GAAAGTGAAG	CTATTAGGGG
22201	GCGAGGGACA	CGTGGAAGGT	CACACAGCAC	ACAGGAGGTG	ATTCACATGT
22251	AGATTTACAG	ACCTGCTCCT	GCCACGCTGG	ACTGGTTCAC	CTCCTAGGCT
22301	GACCCCTGCT	CTCCCCTGTT	CACACACACT	CTCGCACACA	CACACACACA
22351	CACACACACA	CACAGGTGCT	TTGTTCTGGC	CAGGGGTTCC	TAGGGTCACC
22401	TCTTGTTTGC	AGCCACTGTG	ACCCCAACTG	GTCTAACCTC	TCTCTTCCCC
22451	TCCCACCTCC	TTCTGTGGT	TCCTGCAGGA	GATGTTCCGG	AGCATGTTTC
22501	ACGCAGAGAC	CCTGACCGCC	CTGTGAGGGC	TCAGCCAGTC	CTCATGCTGC
22551	CTACAGAGTG	CCTGGCACTT	GGGACTTCCA	TAAAGGATGA	GCCTGGGGTC
22601	ACAGGGGGTG	TCGGGCGGAG	GAAAGTGCAT	CCCCCAGAGC	TTGGGTTCCCT
22651	CTCTCCTCTC	CCCCTCTCTC	CTCCCTTCCT	TCCCTCCCCG	CATCTCCAGA
22701	GAGAGCCTCT	CAGCAGCAGG	GGGGTGCTAC	CCTTACAGGA	GTGAGAGTCT
22751	GGTGAGCCCA	CTCTTACCCC	GTGAGGCCCT	GGCCGCAATG	GACAAGCCTC
22801	CTGCTCACTC	CACCCACCCC	ACCTCTGCCC	TGTCCTTGGC	AGCTGAAGGA
22851	CACCTTGACT	TCCAGCTTTT	ACGAGTGAGC	CAAAAACAGA	AGGACAAGTA
22901	CAACTGTGCT	GGCCTGCTGT	ACAAGCTTCA	AAAAGTGTCC	CAGAGCCCAC
22951	ACGGCTCGGT	GTCAGATGGT	GTCAGGCTGT	CACGGACATA	GGGATAAACT
23001	TGGTTAGGAC	TCTGGCTTGC	CTTCCCCAGC	TGCCTCAACT	CTGTCTCTGG
23051	CAGCTCTGCA	CCCAGGGACC	ATGTGCTCTC	CACACCCAGG	AGTCTAGGCC
23101	TTGGTAACTA	TGCGCCCCCC	GTCCATCATC	CCCAAGGCTG	CCCAAACCAC
23151	CACTGCTGTC	AGCAAGCACA	TCAGACTCTA	GCCTGGACAG	TGGCCAGGAC
23201	CGTCGAGACC	ACCAGAGCTA	CCTCCCCGGG	GACAGCCCAC	TAAGGTTCTG
23251	CCTCAGCCTC	CTGAAACATC	ACTGCCCTCA	GAGGCTGCTC	CCTTCCCCCTG
23301	GAGGCTGGCT	AGAAACCCCA	AAGAGGGGGA	TGGGTAGCTG	GCAGAAATCAT
23351	CTGGCATCCT	AGAAATAGAT	ACCAGTTATT	CTGCACAAAA	CTTTTGGGAA
23401	TTCTCTTTTG	CACCCAGAGA	CTCAGAGGGG	AAGAGGGTGC	TAGTACCAAC
23451	ACAGGGAAAA	CGGATGGGAC	CTGGGCCCCAG	ACAGTCCCCC	TTGACCCACG
23501	GGCCCATCAG	GGAAATGCCT	CCCTTTGGTA	AATCTGCCTT	ATCCTTCTTT
23551	ACCTGGCAAA	GAGCCAATCA	TGTTAACTCT	TCCTTATCAG	CCTGTGGCCC
23601	AGAGACACAA	TGGGGTCTCT	CTGTAGGCAA	AGGTGGAAGT	CCTCCAGGGA
23651	TCCGCTACAT	CCCCTAACTG	CATGCAGATG	TGGAAAGGGG	CTGATCCAGA
23701	TTGGGTCTTC	CTGCACAGGA	AGACTCTTTA	ACACCTTAG	GACCTCAGGC
23751	CATCTTCTCC	TATGAAGATG	AAAATAGGGG	TTAAGTTTTT	CATATGTACA

FIGURE 3G



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

23801 AGGAGGTATT GAGAGGAACC C TACTGTTGA CTTGAAAATA AATAGGTTCC  
23851 ATGTGTAAGT GTTTTGTAAA ATTTTCAGTGG AAATGCACAG AAAATCTTCT  
23901 GGCCTCTCAT CACTGCTTTT CTCAAGCTTC TTCAGCTTAA CAACCCCTTC  
23951 CCTAACAGGT TGGGCTGGCC CAGCCTAGGA AAACATCCCC ATTTCTAACT  
24001 TCAGCCAGAC CTGCGTTGTG TGTCTGTGTG TTGAGTGAGC TGGTCAGCTA  
24051 ACAAGTCTTC TTAGAGTTAA AGGAGGGGGT GCTGGCCAAG AGCCAACACA  
24101 TTCTTGGCCC AGGAGCATTG CTTTCTGTG AATTCAATTAT GCCATCTGGC  
24151 TGCCAATGGA ACTCAAACT TGGAAAGGCGA AGGACAATGT TATCTGGGAT  
24201 TCACCGTGCA CAGCACCCGA AGTGCCAAAT TCCAGGAGGA CAAGAGCCTT  
24251 AGCCAATGAC AACTCACTCT CCCCTACTCC ACCTCCTTCC AAGTCCAGCT  
24301 CAGGCCCAGG AGGTGGGAGA AGGTCACAGA GCCTCAGGAA TTTCCAAGTC  
24351 AGAGTCCCCT TTGAACCAAG TATCTAGATC CCCTGAGGAC TTGATGAAGT  
24401 GATCCTTAAC CCCCAAGTAA TCATTAACCC CCAGACCAGC CTCAGAACTG  
24451 AAGGAGATTG TTGACCCAGT GACCTGGAGT TGAGGCTCAG GGAGAGATCT  
24501 GCCACATGTC TGAGGGTTGC AGAGCC (SEQ ID NO:3)

FEATURES:

Start: 1997  
Exon: 1997-2121  
Intron: 2122-4732  
Exon: 4733-4872  
Intron: 4873-5004  
Exon: 5005-5115  
Intron: 5116-5781  
Exon: 5782-5957  
Intron: 5958-7770  
Exon: 7771-7935  
Intron: 7936-8470  
Exon: 8471-8623  
Intron: 8624-8917  
Exon: 8918-9000  
Intron: 9001-9777  
Exon: 9778-9925  
Intron: 9926-10221  
Exon: 10222-10335  
Intron: 10336-10539  
Exon: 10540-10617  
Intron: 10618-11197  
Exon: 11198-11293  
Intron: 11294-13338  
Exon: 13339-13445  
Intron: 13446-14214  
Exon: 14215-14284  
Intron: 14285-14400  
Exon: 14401-14493  
Intron: 14494-15980  
Exon: 15981-16262  
Intron: 16263-17597  
Exon: 17598-17652  
Intron: 17653-18842  
Exon: 18843-18988  
Intron: 18989-20477  
Exon: 20478-20549  
Intron: 20550-22478  
Exon: 22479-22523  
Stop: 22524

CHROMOSOME MAP POSITION:  
Chromosome 1

ALLELIC VARIANTS (SNPs):

DNA				Protein		
Position	Major	Minor	Domain	Position	Major	Minor
48	C	G	Beyond ORF(5')			
132	G	A	Beyond ORF(5')			
724	A	C	Beyond ORF(5')			
1558	C	G	Beyond ORF(5')			

FIGURE 3H



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

1577	A	G	Beyond ORF(5')			
2487	C	A	Intron			
2634	T	C	Intron			
4352	A	G	Intron			
5157	A	C	Intron			
5658	A	T	Intron			
5945	T	C	Exon	180	T	T
6281	C	T	Intron			
6452	G	C	Intron			
6610	T	G	Intron			
7247	T	C	Intron			
7360	A	G	Intron			
7644	A	T	Intron			
8127	A	C	Intron			
8317	G	A	Intron			
9079	G	A	Intron			
9537	G	T	Intron			
12302	C	G	Intron			
12354	C	T	Intron			
12487	C	T	Intron			
13198	-	A	Intron			
13257	A	G	Intron			
14541	G	A	Intron			
14545	A	G	Intron			
15041	C	A	Intron			
15053	A	C	Intron			
15065	A	G	Intron			
15108	A	C	Intron			
16274	-	G	Intron			
17424	C	T	Intron			
17627	G	A	Exon	657	V	V
18427	T	C	Intron			
18813	C	G	Intron			
19035	T	C	Intron			
19182	T	C	Intron			
19508	-	G C	Intron			
19571	T	G C	Intron			
20147	T	G	Intron			
20180	G	A	Intron			
20584	A	T	Intron			
20717	T	C	Intron			
20894	A	G	Intron			
21787	-	A C	Intron			
22264	T	C	Intron			
22338	-	C A	Intron			
23363	T	C	Beyond ORF(3')			
23688	G	A	Beyond ORF(3')			
24210	A	C	Beyond ORF(3')			

Context:

DNA  
Position  
48

CTGGGTTCTATGTGGGGAGGTCATGCTCCCCACTCATTGAGCCCC  
[C,G]  
CAGGCAAACACCTGGACAGCCAGACCCATGCAGACTCTGGAGCAGGTGGAGAGGAAGAG  
TGAGACCACCCCGCCTCACGGGCGGTGAAGGGCCGGCAGCCTCTGAATAGTCTCTGCTAG  
GAGGTAGAAAGCACCTCCCATCTTAATCATAGTAATCATCGCCACTACCATTCTACTGGG  
TGCTATAAAAGGCCAGCCTCTTCATACACATGATCTCACTGAATCCTCATAGCATCTGC  
CTGCGACTGTTATTATCCCCATTTACAGATGAAGAACTGAATCTTTGAACCCAGGTCAT

132 CTGGGTTCTATGTGGGGAGGTCATGCTCCCCACTCATTGAGCCCCCAGGCAAACCA  
CTGGACAGCCAGACCCATGCAGACTCTGGAGCAGGTGGAGAGGAAGAGTGAGACCACCC  
GCCTCACGGG  
[G,A]  
GTGAAGGGCCGGCAGCCTCTGAATAGTCTCTGCTAGGAGGTAGAAAGCACCTCCCATCT  
TAATCATAGTAATCATCGCCACTACCATTCTACTGGGTGCCTATAAAAGGCCAGCCTCTTC  
ATACACATGATCTCACTGAATCCTCATAGCATCTGCCTGCGACTGTTATTATCCCCATTT

FIGURE 3I



724

ACAGATGAAGAACTGAATCTTTGAACCCAGGTCATCTGGCTCTCAAACCTTGCTGTTT  
TCCCTAAGCCACCCGGTCTCTCATTTCTCCCACTGAAATGTCTCACATGCCATTGCCCTT

ATTGCCCTTACTCATTTCTGCCATGTCTCTCCAAAACACCATTTATCAATTGCTCAA  
CAAGTATGTGTTGAGTACACACTAAGGGCCAGGCGAGGGGCTGGGCACAGGCGCTGGGG  
TAGGTTCAATTCTCCACCTTCGCTTCTGCTGGGTATCACCTGTGGGGCTTTGCCGGGCAT  
CCCACCTCACCTGTAGTTCAAGTGGACCTTGGGATCCCAAGACCAATGAATGGAATGC  
ACCAGCCAGCCTTCACTAATTTGAGCACAATCTTATTATAATAGAACTCACATTTGC  
[A,C]  
TCACACTTTACATTTTACACAACCCCTTCTTATCCATTAACCTATTTGATCTTCAACA  
ACCTGTGAGATATGTCTGTTACTCCCACTTTAGTGATACAGAATCTGAGGTTTGAAAAG  
TAATGCTGACCATTTCTGCCTCATTAAATAAAAGCAGGATTAACCCAGGCTCCTGGACCTT  
CCACAAAAGGCATTAAGCAACCTGCTCCCTCTGACAACCTCCCCTGTACCCAGGCTCT  
CCTCTGGGAAGTTGGGGGCATCTCTAGCCCCAAGTAGTTACTCATTTTCAACCCCATCT

1558

TCAGCTCTGCCATCTCAGCTCCTGGAACGTGAGCCAGGTTGCGCAAAAAGTGAGGAGGA  
GAGGAGCGGCAGTACACAAGGGTGGGGGAAAGATTAGGCACAGGAAGCCGTGGGAGAGAG  
AGCCGGCAGGTGGACCATCCTGGTTTCCCCACACACACCATTTGCCCCCTGGGAAACCTG  
TTGGTGAAGTTCTAGATGTCTTATCCAAGAAGGGTCTCTTGGGTGATCTCAGCTATCC  
CCCTGCCTCTAGGCAAGCTGTTTTCTGTTTCTTCCAAGCTGACTGGCTGAATGGTAGGAG  
[C,G]  
CTTTCTGCCAGGGAACTAAGGTCTGGGAAGGGAGTATGGCTTGTTGGGGACACCAGGGGT  
CAGGGGAGGGGAGGGTCCACCTGCTGAATCAAGTGGGGCCTCCTGCCCTCGTGATTCCCC  
TTTGCTGGTGCTCAGTGGGGGTGATGGTGACGCCACAGGTGTGGAGTGCCAGCCACGTG  
CTGAGCGCAAGCAAAAAGCCAGGGTGAAGTCTATGCATCATCAGTGCCTGGGAAGGAAG  
GCCACTGCGAGCAGGAGTCTGACGGAAGAACTTACAGAGGGAAGGAGGCACCTTGCT

1577

CTCCTGGAACGTGAGCCAGGTTGCGCAAAAAGTGAGGAGGAGAGGAGCGGCAGTACACA  
GGGTGGGGGAAAGATTAGGCACAGGAAGCCGTGGGAGAGAGAGCCGGCAGGTGGACCATC  
CTGGTTTCCCCACACACACCATTTGCCCCCTGGGAAACCTGTTGGTGAAGTTCTAGATGT  
CTTATCCAAGAAGGGTCTCTTGGAGTCTCAGCTATCCCCCTGCCTCTAGGCAAGCT  
GTTTTCTGTTTCTTCCAAGCTGACTGGCTGAATGGTAGGAGCCTTTCTGCCAGGGAACT  
[A,G]  
AGGTCTGGGAAGGGAGTATGGCTTGTTGGGGACACCAGGGGTGAGGGGAGGGGAGGGTCCA  
CCTGCTGAATCAAGTGGGGCCTCCTGCCCTCGTGATTTCCCTTTGCCTGGTGCTCAGTGG  
GGGTGATGGTGACGCCACAGGTGTGGAGTGCCAGCCACGTGCTGAGCGCCAAGCAAAAAC  
GCCAGGGTGAAGTCTATGCATCATCAGTGCCTGGGAAGGAAGGCCACTGCGAGCAGGGAGT  
CTGACGGAAGAACTTACAGAGGGAAGGGAGGCACCTTGCTTTATCGGGCGGGGAAGGC

2487

ACACGGCTTCTGCACTGGTATCCCTAAGATGGGGTTAAGGGAAGCCCTGGGGAAGTGAGG  
TTCTGAATGATGAATTTAAGATCCTACAACCTCATCTGACTGAGACCCCAAGGAGGAT  
GGGGAGCAGGAGCAAGAACCATCCAGAAGGGTTATATGGCATTCCCAAACCCCTGCATGG  
CATCTCCCATATTTCTCAATTCACCCGGGTCTCTCTGGGTTTGTAAAGGCATGGTAGATGA  
GCATCTACGTTATGGAGGGGTGGGGAGCATCAGAGCCCTTACTCCATGCCCTGTTCCCTC  
[C,A]  
TTACAAAAAATACCTGAAGTTACCATCACCCAGGTTCTTTGTCTTTCCCTCCCGGATG  
TTCTTTCTCCACTTGGTCCAGAGAATGCCAAAAGGAGGCCCTAAATTTCTGAATTTTCC  
TGAGGGGATCTACCAGGGTGTAGTCTTACCAGCGCCAGGGTCTTTTCACTCTCATCTCC  
CTGGAAATGCGATGGTGGGTATGAAACCTTGTCCCTAAGTAGGCGCTACACAAGGTGATC  
CATACCCACACCCAGGAGGCTGGGGCTGCGGGTGTACCCCTCCCCATTCCCAGACTCT

2634

AGGGTTATATGGCATTCCCAAACCCCTGCATGGCATCTCCCATATTCTCAATTACCCCGG  
GTCTCTCTGGGTTTGTAAAGGCATGGTAGATGAGCATCTACGTTATGGAGGGGTGGGGAG  
CATCAGAGCCCTTACTCCATGCCCTGTTCCCTCCTTACAAAAAATACCTGAAGTTACCAT  
CACCCAGGTTCTTTGTCTTTCCCTCCCGGATGTTCTTCTCCTCACTTGGTCCAGAGAA  
TGCCAAAAGGAGGCCCTAAATTTCTGAATTTCTGAGGGGACCTACCAGGGTGTAGTCC  
[T,C]  
ACCAGCGCCAGGGTCTTTCACTCTCATCTCCCTGGAAATGCGATGGTGGGTATGAAAC  
CTTGTCCCTAAGTAGGCGCTACACAAGGTGATCCATACCCACACCCAGGAGGCTGGGG  
TGCGGGTGTCCCTCCCCATTCCAGACTCCTGGCAGACCTCCTTGCCCCAGCTATAG  
GCCAATCACTCTCCCTCACTCCCTTGGGGAAACGGCTGATTAGTTACCTGGATTGAGG  
TCACTGGCAATGGCTGAAGTGGAGACGAGGTGGAACCTGGTTCAGGCCGGGGGAATCACC

4352

ATTGGAGTTACCACACATAAAGGATAGTGAGTCAGCAGAGTGCACCCTGCAGGAACAATA  
GAGCCTTCTTTTCAAGGAAGTTCTAAGAAAAATGGCAGCAGGCAGGCCCACTCGGGTG  
TATTAATCACTCATTTATTTCAACAAATATTTACTAAGTGCCCCCTGTGCAAGGCTCGAGG  
TGTACAAAGATGAACAGGAGAGCTAGACTTCTTGCCATGCGTGGTGGGGTTTGTGCCTA  
GTGGGAGAGACAGACAAAAAGCAAGGAATGCACACACAGGATGCACACACAGCGGCAGGA

FIGURE 3J





Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

[A, G]  
CCAAGGTGCAGTTACCCAGGCCTGGGATCAGACAGACAGGACTCAGAGGAGACTTTCCCA  
GAGAAAAGCCATCTGAGCCAAGGGATGGATCTGATACCTCCGAAGGCTGAGCCACCATAA  
CACTCATACCTTTAAGCCAAGTCTTATAAACTCCCAGGTAAGCAGCTGGCAGTCAGAAG  
ACCTCCAGCTAATGCCAGGACAAGTTGATGAGCTCTCAAGAAAAAGTTCTGCCTTTTC  
TTCTCAATATCCCTGGCACACAGTTCAGTGAATTTTGAATGAACCAATGAATGAAATGAG

5157  
ATCCAGGTCCCACAAGGTGAAGGGGCTCCTTCAGCCAGGCCTGGATTGCCACTCCCCTCA  
CCATTCCTCTCCTCATCCCCACTCCATCCCTCTGTGATCCCATAAGCTAGTCATGCTGC  
TGAGCTTCAGTCTCGTTGTCTCTGCAGGCATGGCATTGCTCTGCTGGCCAACCTTCCT  
GCAGTCAATGGCCTCTACTCCTCTTCTCCCCCTCTGACCTACTTCTTCTGGGGGGT  
GTTACACAGATGGTGCCAGGTAAGGCCTCTCCCCTCTGGGCAGGCAGGATGACCCAGACC  
[A, C]  
CAAGGATGGGAGGTGTGGCAAAGGGGCTCGGGAGATTTTCCATCTGCATTCTCCTGGAG  
TTGTTCTGGTCACTAGGGGAATGGTCACTGTGAATGTCAATTCAGGTCTCGGTG  
ACCTTGAGAAAACCACTGAGCCTCTTTGAGTTAGTTAGCATTACCTGTTCCATCTTCT  
CCTAGGAATGAGAGGAAGACTTAGCAGAAACAGATATACCATATGCTATAACATGCTTAA  
ACAGATGTGAGAAATCACCATCTAACTCCCTGGTTGGTCCCAGCCGGCCACTACAGGGAC

5658  
TTAGCAGAAACAAGATATACCATATGCTATAACATGCTTAAACAGATGTGAGAAATCACCA  
TCTAACTCCCTGGTTGGTCCCAGCCGGCCACTACAGGGACATTTGGACTTCTCTGGTGCT  
AAGTGAGATGGAGGAAAGCCTGGTCACAAGGGCTGGTTTCTGGTTCAGGCTCTGCTTATA  
TTTCTTATTTCTGAGTTCAATTTCTCACGTGTCTGTATGACAATATTGACCATTGGGGT  
AAAAGCACCTTGAAAAGCATAGATCATGGTTAGAGTGAGTGGTTGTTATTATTGTGTTG  
[A, T]  
GAAGAGCCTTGGAGGTGCAGGGATCCATCCCCCTGGGGTGGGAAGCATTCTGGGCCCC  
TTTCTGGTTTCCATCGGTGTGGTTCAAACCTCTGATTTTGTGGCTGGGTGGGGCACCA  
CAGGTACCTTTGCCGTTATCAGCATCCTGGTGGGTAACATCTGTCTGCAGCTGGCCCCAG  
AGTCGAAATTCAGGTCTTCAACAATGCCACCAATGAGAGCTATGTGGACACAGCAGCCA  
TGGAGGCTGAGAGGCTGCACGTGTAGCTACGCTAGCCTGCCTCACTGCCATCATCCAGG

5945  
ATTATTGTGTTGGAGAAGAGCCTTGGAGGTGCAGGGATCCATCCCCCTGGGGTGGGAAG  
CATTCCTGGGCCCCCTTCTGGTTTCCATCGGTGTGGTTCAAACCTCTGATTTTGTGGC  
TGGGTGGGGCACCACAGGTACCTTTGCCGTTATCAGCATCCTGGTGGGTAACATCTGTCT  
GCAGCTGGCCCCAGAGTCGAAATTCAGGTCTTCAACAATGCCACCAATGAGAGCTATGT  
GGACACAGCAGCCATGGAGGCTGAGAGGCTGCACGTGTAGCTACGCTAGCCTGCCTCAC  
[T, C]  
GCCATCATCCAGGTGAGGGGGCAGCCCCCAACCTGTAGAAAGGGCATCAGACCACCCTG  
CCCCTCCCTCAAAGCCTTAGCTTTGATGCTAAATCTGATTTAGGGGGCTGGGTGTGGAGG  
CTCAGTCCCTGTAATCCAGCACTTTGGGAGGCTGAGGAGGGTGGATCACTTGAGGTGAGG  
AGTTTGAGACCACCTTGACCAACGTGATGAAACCCCATCTCTACCAAAAATACAAAAATA  
ATCCAGGCTTGGTAGTATGCGCCTGTAGTCCCACCTACTCAGGAGGCTGAGGCAGGAGAA

6281  
GCTAGAAGGGCATCAGACCACCCTGCCCTCCCTCAAAGCCTTAGCTTTGATGCTAAATC  
TGATTTAGGGGGCTGGGTGTGGAGGCTCATGCCTGTAATCCAGCACTTTGGGAGGCTGA  
GGAGGGTGGATCACTTGAGGTGAGGAGTTTGAGACCACCTTGACCAACGTGATGAAACCC  
CATCTCTACCAAAAATACAAAAATAATCCAGGCTTGGTAGTATGCGCCTGTAGTCCCACC  
TACTCAGGAGGCTGAGGCAGGAGAATCACTTGAATCCGGGAGGCAGAGGTTGCAGTGAGC  
[C, T]  
GAGATCGCGCCACTGCACTCCAGCCTGGGTGACAGAGCGAGACTCCGTCTCAAAAAAAA  
AAAAAAAAAAAAAAAAAAAAAAGTTAGGGCTCACCTCCTCCCTCCTCCCATCCCAGG  
GCTAAAGTGAACCTTGAAAATTAACAGTATCTCCTCATCTGCATGTAGCAGGACCATACA  
AAAAAACACAGCTGTACCTGGTTAACTGTCTGAGCTTTAAACCTGTAAAAGACTCAC  
AGCCTCTCTCATTATCCCGTGGAGAAACCAACTCTCTGCCAGCATAGTCTTGCACT

6452  
ATGAAACCCCATCTCTACCAAAAATACAAAAATAATCCAGGCTTGGTAGTATGCGCCTGT  
AGTCCCACCTACTCAGGAGGCTGAGGCAGGAGAATCACTTGAATCCGGGAGGCAGAGGTT  
GCAGTGAGCTGAGATCGCGCCACTGCACTCCAGCCTGGGTGACAGAGCGAGACTCCGTCT  
CAAAAAAAAAAAAAAAAAAAAAAAAAAAGTTAGGGCTCACCTCCTCCCTCCTCC  
CCATCCAGGGCTAAAGTGAACCTTGAAAATTAACAGTATCTCCTCATCTGCATGTAGCA  
[G, C]  
GACCATACAAAAAACACAGCTGTACCTGGTTAACTGTCTGAGCTTTAAACCTGTAA  
AAGACTCACAGCCTCTCTCCATTATCCCGTGGAGAAACCAACTCTCTGCCAGCATAGTC  
TTGCAGACTGCTAATTTCTCTAACATCCCTCACTCCGCTCCAGCCTCCTCTGCTCCAAG  
CCACAGCAGCAGTTGCACAACATAAATTGAGCTTCTGCAAAATGGTTGCAAAGGATTCTGC  
TAGGTTTTATGAAGGGAAGCACACATGACAGAATGCAAGAGCAAAACACAGTCCCAGAG

6610  
GTGACAGAGCGAGACTCCGTCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAGTTA

FIGURE 3K



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

- GGGCTCACCTCCTCCCTCCTCCCCATCCCAGGGCTAAAGTGAACCTTGAAAAATTAACAGT  
ATCTCCTCATCTGCATGTAGCAGGACCATACAAAAAACAACAGCTGTACCTGGTTAAAC  
TGTCCTGAGCTTTAAACCTGTAAAAGACTCACAGCCTCTCTCATTATCCCGTGGAGAAA  
CCCAACTCTCTGCCAGCATAGTCTTGACAGACTGCTAATTTTCTCTAACATCCCTCACTCC  
[T, G]  
CTCCAGCCTCCTCTGCTCCAAGCCACAGCAGCAGTTGCACAACATAAATTGAGCTTCTGC  
AAATGGTTGCAAAGGATTCTGCTAGGTTTTATGAAGGGAAGCACAACATGACAGAATGCA  
AGAGCAAAACACAGTCCCAGAGAGCGCCTTTTCACTCACTCATTCACTCGGTTTTGTGCC  
AAGAACTAGGCTAAACCCTGGGATACAAAGATAAGTAAGAAAGAGGTCCAATTACAAGT  
TGCTCACAGCCCAGCAGAGGAAGGAGCCATGTCAACAGATAAATTTGTATGCAGTGAGAT
- 7247 GACACAGAGCAGAGTCACGGAGGACCTCAAAGAGGAGGTGACACTCCACCTCTCTTAAAG  
GATGAGAACTTAACCAGGAACAAGGTATACAGAGGATGGTCCAGGCAGAAAGGGAACAGTG  
CCTAAAAACACTGAGGCCTGAGAGAGTGTGATCTGCGCAGGCAAAAGTAAGGGGCTTGGTG  
TGGCTGGAGGGTAGAGGGCCAGAGAGGATGGAAAAGTAGGCAGGAGCCAGACAATGAG  
ATCTGGGTCTGTTCTCTGACAGCAGCTTTGGGTCTGATTGGCAGTTTATAAGGATCGTT  
[T, C]  
GGGCTACACAATGATGAGTGGGAGGTGGATTAGAATCAAGGCAGGGGACCTGTTGGGAGA  
CTCTGCAGAGGCCAGGCAGGAATAATGCAGGCGAAGACCAGGTAGAGAAAGAGATGGGG  
CTGGACTTGAAAAGAATGTTTTACCAGGAGCTTGGTGATAGACTGGATGTGGGAGGTAAG  
GGAGGATGACTCTCAAGTTTTTGGTTGGGCAACCAGGTTAATGATGGTGTCTTTACTGA  
GAGAGAAAACACTGGGGGAGGACTAGACTTATTTTACAGATAAGCCAAAGCCAGAGAGGT
- 7360 AACAGTGCCTAAAAACACTGAGGCCTGAGAGAGTGTGATCTGCGCAGGCAAAAGTAAGGGG  
CTTGGTGTGGCTGGAGGGTAGAGGGCCAGAGAGGATGGAAAAGTAGGCAGGAGCCAGA  
CAATGAGATCTGGGGTCTGTTCTCTGACAGCGACTTTGGGTCTGATTGGCAGTTTATAAG  
GATCGTTTGGGCTACACAATGATGAGTGGGAGGTGGATTAGAATCAAGGCAGGGGACCTG  
TTGGGAGACTCTGCAGAGGCCAGGCAGGAATAATGCAGGCGAAGACCAGGTAGAGAAAAG  
[A, G]  
GATGGGGCTGGACTTGAAAAGAATGTTTTACCAGGAGCTTGGTGATAGACTGGATGTGGG  
AGGTAAGGGAGGATGACTCTCAAGTTTTTGGTTGGGCAACCAGGTTAATGATGGTGTCT  
TTACTGAGAGAGAAAACACTGGGGGAGGACTAGACTTATTTTACAGATAAGCCAAAGCCA  
GAGAGGTGATGTGACAGAAAGGCCCATGCTCTAAAGGAGCTGAAGGTCTGATGGCAGCCA  
TGTAGAGCACAGTGAAGGGCAGGTGAAGGTACAGATGGTCCAATCCCTCAAGCTACTG
- 7644 GACCAGGTAGAGAAAGAGATGGGGCTGGACTTGAAAAGAATGTTTTACCAGGAGCTTGGT  
GATAGACTGGATGTGGGAGGTAAAGGAGGATGACTCTCAAGTTTTTGGTTGGGCAACCAG  
GTTAATGATGGTGTCTTTACTGAGAGAGAAAACACTGGGGGAGGACTAGACTTATTTTA  
CAGATAAGCCAAAGCCAGAGAGGTGATGTGACAGAAAGGCCCATGCTCTAAAGGAGCTGA  
AGGTCTGATGGCAGCCATGTAGAGCACAGTGAAGGGCAGGTGAAGGTACAGATGGTCCA  
[A, T]  
TTCCCTCAAGCTACTGCTACGCTAGGACTGCACGGAGCTCCAGACCTGCGTGTGTGTGGG  
GCGGGTGGTGGAACTGCTGAACCACATTGGTCTTCCGCCCAACCACCTTTTCTCCTC  
TCTCAGATGGGTCTGGGCTTCTGCAAGTTTGGCTTTGTGGCCATCTACCTCTCCGAGTCC  
TTCATCCGGGGCTTCTGACGGCCGCGGCTGCAGATCCTGATTTGGTGCTCAAGTAC  
ATCTTCGGACTGACCATCCCTCCTACACAGGCCAGGGTCCATCGTCTTTGTGAGTCTG
- 8127 CATCCGGGGCTTCTGACGGCCGCGGCTGCAGATCCTGATTTGGTGCTCAAGTACAT  
CTTCGACTGACCATCCCTCCTACACAGGCCAGGGTCCATCGTCTTTGTGAGTCTGGG  
GATGCACCCCTGCCATTGGAGCAAGGCTCCAGCAGACATGAGGAGGATGTAAGTGTGTTT  
AAGATGTGCTGAGCTCCTCATTGCAAGGGCTGGCTTAGCTGTTGTTGAGAGAGGATTCTG  
AGGGGGTTTTCTGCTTGGGAGGGTCAAAGTCATGACTCACAGAGGTTCTTGGTAGTTAAT  
[A, C]  
CCTGCAGAAAAGAGCTGTACATTCTCCGCCAGTTCCTTCTAGTGCCTCAACCCCTCC  
CTGCCTGGAAAGTCTGCCTTATGTCTAATCTCCATCCCTCCTCCTCAGCCCAAACCTCT  
CTAAAGAAAAAGAAAGCATTCTTTTCTAGCACAAGTTCCTCATGTGCTTTTGGGAAA  
GGGCGGTGGGCGACGGGACAGGGTCTGATCAGGGTTTTAATTCTGTCTTGGTGTGCCT  
CCATTAGCTTTGATGGCATCCCTCCCTGGGTGAGACACCCAAAGGTGGGGTATTATGGG
- 8317 GAGCTCCTCATTGCAAGGGCTGGCTTAGCTGTTGTTGAGAGAGGATTCTGAGGGGGTTTC  
TGTCTTGGGAGGGTCAAAGTCATGACTCACAGAGGTTCTTGGTAGTTAATACCTGCAGAA  
AAGAGCTGTACATTCTCCGCCAGTTCCTTCTAGTGCCTCAACCCCTCCCTGCCTGGA  
AAGTCTGCCTTATGTCTAATCTCCATCCCTCCTCCTCAGCCCAAACCTCTCTAAAGAA  
AAAGAAAGCATCTTTTCTAGCACAAGTTCCTCATGTGCTTTTGGGAAAGGGCGGTGG  
[G, A]  
CGACGGGACAGGGTTCCTGATCAGGGTTTTAATTCTGTCTTGGTGTGCCTCCATTAGCTT  
TGATGGCATCCCTTCCCTGGGTGAGACACCCAAAGGTGGGGTATTATGGGAAGAAGGGGT  
GGGAGCCTGTGAGCATGATGCTCTTTCCCCAGACCTTCATTGACATTTGAAAAACCTC

FIGURE 3L



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

9079

CCCCACCAACATCGCTCGCTCATCTTCGCTCTCATCAGCGGTGCCTTCTGGTGCTG  
GTGAAGGAGCTCAATGCTCGCTACATGCACAAGATTCGCTTCCCCATCCCTACAGAGATG

TTCTACTGCTCTAATAATTCCCCCTAAGGAGGCAGGGGAGTGGGATTCAGGGTCCCCAGA  
GAAAAGGGAGACTTGAGAGAGACGCCTGCCCTGGCCCCACCTTAGGGCCAATCCCCATTC  
TCCACTCTGGGGTTTGAGGTGGTGGTGGCAACAGCTATCTCCGGGGGCTGTAAGATGCC  
CAAAAAGTATCACATGCAGATCGTGGGAGAAATCCAACGCGGGTGAGTCCAGGTGGCCCA  
GAAGCTGGGCCACCCGACCTCATGCCCACTAAGGCCTGAGCTCGGAGAGGGAGACAA  
[G, A]  
ATGAACTCTATGAAAGTGCAGTCGAACTGTATGACACTGACCATGTATGAATTATTACT  
ATTACCGTTTCTGAGAAGGGCCGCACAACAGCCAATGTAGGCTATTTTATGAGAAATG  
AGTCTTAACCTGCCACACTCCCCTTATAAATCTCATTCAACTGATGCTGTTAAACAAAGCC  
TCTCTGAACAGCCGCTTGTGGCTCTTTCCTTGTCTAATGCATTGGTTCTTTGTCCAT  
GTAGAAAGGGAATATTAGGTTCAACAGATTATGAAGCATCCACTCTGTGCCAGGCAC

9537

AACTGATGCTGTTAAACAAAGCCTCTCTGAACAGCCGCTTGTGGCTCTTTGCCTTGCTC  
TAATGCATTGGTTCTTTGTCCATGTAGAAAGGGAATATTAGGTTCAACAGATTATGA  
AGCATCCACTCTGTGCCAGGCACCATGTGGGCCCTGGGAGGAGAGGGGTGACGCTTGTC  
CTGCAGGGTTGGAACAGGCAAGGGAGGGAAGACCACATAGCACCAAGGTCTAGGGGCT  
GTGGACTCGTGAGCATACAGGGTTGAGAATCTGGGAGTTAAACAAACGAGGCCCTACCACA  
[G, T]  
ACTGGCCCCGGGACCTTGGGCAAGTTAGGTTCTCTCAGCCTCAGTTTCTCTTTGTAAA  
ACAGGAGTGATGGTCCCTACCTATGGGGTGGTGTGAGGATTGAGCTGGATGGGATAA  
CTTAGGCAAAAGATCCCGCACACCATGGGGGCTGGCTGGTCCCTGTGGGCTGGTGAAGG  
ACTTGGCTGCCCTCCCCTCACACCCTTGGGTTCTGCCTCTTCTGGCTCTCGGCAG  
GTTCCCAACCCCGGTGTGCGCTGTGGTCTCACAGTGAAGGACATGATAGGCACAGCCTT

12302

AGCCCCACCATAACCTATGGGAGAGGATTTACTAACTTTCTTAACGGTGATGAAACCAA  
GGCTCAGAATGGTTAAGTAAATTGTCAAAGGCCACAGAGGTAGGGAGTGGTAGAGTCTGG  
ATTAAGAACTCCAAGTCTGGACTCCAGACCTTAGGCTGTACTGTCTCATAGGGAAGGCA  
GTCTCACCCACCTAGGGCAGAGAAGAAAATCCTTAAAGCCAGAGAAGTGAGTGGCTCATC  
TGTGGTCAACCCAGAGAGACAGTGATGAGGACAGGGAGAAAAATTATACCTCAGTCCCAG  
[C, G]  
CCAAGGATCTGCTTTGACCATAACCCCAACAGCCCCGCTATGGTGGTATTTCTTAGGT  
TCATATGGCGGCTTTTGTTCATTTGATCTTCACAGCAATTCTCTACAGGAATCTGGGC  
AGATTTATTTCTTTAGAGGAATTTCCAGGTCTTAAATCTATAGGGGGCAACTATCAAA  
ACTTACCCAATGTTGCCCCCTACCCACACACAAAACAGGCCCCAGCCGATCAGAAAG  
CACTGCTGAGCTCCTGTGAGGGCCACGCAGCTCGCTGTGAGACAGAGAGAGGGAATCA

12354

GAAACCAAGGCTCAGAATGGTTAAGTAAATTGTCAAAGGCCACAGAGGTAGGGAGTGGTA  
GAGTCTGGATTAAACTCCAAGTCTGGACTCCAGACCTTAGGCTGTACTGTCTCATAG  
GGAAGGCAGTCTCACCCACCTAGGGCAGAGAAGAAAATCCTTAAAGCCAGAGAAGTGAGT  
GGCTCATCTGTGGTCACCCAGAGAGACAGTGATGAGGACAGGGAGAAAAATTATACCTCA  
GTTCCAGGCCAAGGATCTGCTTTGACCATAACCCCAACAGCCCCGCTATGGTGGTATT  
[C, T]  
CCTTAGGTTTCATATGGCGGCTTTTGTTCATTTGATCTTCACAGCAATTCTCTACAGGA  
ATCTGGGCAGATTTATTTCTTTAGAGGAATTTCCAGGTCTTAAATCTATAGGGGGCAAC  
CTATCAAAATTCACCAATGTTGCCCTACCCACACACAAAACAGGCCCCAGCCGA  
TCAGAAAGCACTGCTGAGCTCCTGTGAGGGCCACGCAGCTCGCTGTGAGACAGAGAGAG  
GGAACCTACATTTATTGATCACCTACTGAGCATCCATCACTAGGCTAGGACCGTCACATT

12487

ACCCACCTAGGGCAGAGAAGAAAATCCTTAAAGCCAGAGAAGTGAGTGGCTCATCTGTGG  
TCACCCAGAGAGACAGTGATGAGGACAGGGAGAAAAATTATACCTCAGTCCCAGGCCAA  
GGATCTGCTTTGACCATAACCCCAACAGCCCCGCTATGGTGGTATTTCTTAGGTTTCAT  
ATGGCGGCTTTTGTTCATTTGATCTTCACAGCAATTCTCTACAGGAATCTGGGCAGAT  
TTATTTCTTTAGAGGAATTTCCAGGTCTTAAATCTATAGGGGGCAACTATCAAACTT  
[C, T]  
ACCCAATGTTGCCCTACCCACACACAAAACAGGCCCCAGCCGATCAGAAAGCACTG  
CTGAGCTCCTGTGAGGGCCACGCAGCTCGCTGTGAGACAGAGAGAGGGAACCTACATTT  
ATTGATCACTACTGAGCATCCATCACTAGGCTAGGACCGTCACATTCCTTAACTTTTGA  
ATCCTTTTCATGAGGTAGGCATTATTATTCTCTTTTGTTCACATAGCCATTAAGAACA  
AAATTTGGGGCTGGGTGTGCTGACTCACCTGTGATCTAGCACTTAGGGGGCTGAGGC

13198

CTAACTATTAGGAAGGTTAGGCGGGAGCACAACTTGGGTTCCAGGGTTTGAGGCTCCAG  
TGAGCTGATCTTGCCACTGCACTACAGCCTGAGCAACAGAGCAAGACCCTGTGACTCCAA  
AAACAAACAAACAAACATTTTGAACCCAAACAGATCTGACCCAAGATGCATGCTCTTA  
TAGATGCCACCTCCCTGTGTGCTGGGGCTTCTACTAAAAACACAGACAAGATCAGGCAAC  
CACAGTCAATCTAAGGGAAAGAGGAAAGTGAACCAAGCACAAATACATAAAATATTGC

FIGURE 3M



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

- [-,A]  
AAAAATGCTATTTAAAGAAAAAAGAGAAGAGAGGCTCTGAGGTTGTAATAACAGAGAAT  
GGCCTTGGCTAATCCAGGAAGACTTCCTGAAAGAGGTTGTTTTTCCCCAGGTCTGCTTT  
TGACATCTCTCTTTTACAGTGCATCTGGGTAGTGAGCTTCCTCTCCTCCTTCTTCTCA  
GCCTGCCCTATGGTGTGGCAGTGGGTGTGCGCTTCTCCGTCTGGTCTGGTCTTCCAGA  
CTCAGTTGTAAGTGATAGCTTCCGCCCTCTAGGCCACAGTCGGTCCCTGGGCCAGCC
- 13257 GTGAGCTGATCTTGCCACTGCACTACAGCCTGAGCAACAGAGCAAGACCCTGTGACTCCA  
AAAAACAAACAAACACATTTTGAACCCAAACAGATCTGACCCAAGATGCATGCTCTT  
ATAGATGCCACCTCCCTGTGTGCTGGGCTTCTACTAAAAACACAGACAAGATCAGGCCAA  
CCACAGTCAATCTAAGGGAAAGAGGAAAGTGTAAACAAAGCACAATAACATAAAATATTG  
CAAAAATGCTATTTAAAGAAAAAAGAGAAGAGAGGCTCTGAGGTTGTAATAACAGAGA  
[A,G]  
TGGCCTTGGCTAATCCAGGAAGACTTCCTGAAAGAGGTTGTTTTTCCCCAGGTCTGCTT  
TTGACATCTCTCTTTTACAGTGCATCTGGGTAGTGAGCTTCCTCTCCTCCTTCTTCCCTC  
AGCCTGCCCTATGGTGTGGCAGTGGGTGTGCGCTTCTCCGTCTGGTCTGGTCTTCCAG  
ACTCAGTTGTAAGTGATAGCTTCCGCCCTCTAGGCCACAGTCGGTCCCTGGGCCAGC  
CCGCAAGGGCTTCCATGCCACGGCTGGCTAGTCCACTGTACCTCCACCTCTGGGCC
- 14541 TCATGGACACTGACATTTATGTGAATCCCAAGACCTATAATAGGGTAGGTAATTCAAGCT  
TATGACCTCCTTCTTTTGTCTGCAACACCCCAAGAAGAGGTTGCTTTTAAAGCCAATA  
AAGACATTTCTGCAACTTGAGCTCAGTCTCCCTGTACAGGCCCAGGATATCCAGGGGAT  
TAAATCATCAGTACTGCTCCCTCTCTACTTTGCCAATCAGAGATCTTCAAGGCAAAA  
GGTCATCGCCAAGGTAAGGCTCAGTCCCTGGCGACCAGAGGCTCTGGACAGAGAGTGGCC  
[G,A]  
GAAAATGGAAGCAGAAGGGCGGTGGGAGCTGAGAATAGGCCACTCCCATAGAGGGTGGAG  
GTCAAGATTGCTGTTGGCTCTCTCCCTGCAGACAGGCATGGACCCCAAGAAAGTATTACT  
AGCCAAGCAAAAATACCTCAAGAAGCAGGAGAAGCGGAGAATGAGGCCCAACAACAGAG  
GAGGTCTCTATTATGAAAACCAAGGTGAATGAAGGCCAGAAGCAGCCCCGTGCCCTGCT  
CTCCTGCCCATTTCTGATACTGCCCCCTGTTACTCATGGTACCCTGGGGGCCCCGCTTCCC
- 14545 GGACACTGACATTTATGTGAATCCCAAGACCTATAATAGGGTAGGTAATTCAAGCTTATG  
ACCTCCTTCTTTTGTCTGCAACACCCCAAGAAGAGGTTGCTTTTAAAGCCAATAAAGA  
CATTTCTGCAACTTGAGCTCAGTCTCCCTGTACAGGCCCAGGATATCCAGGGGATTA  
ATCATCAGTACTGCTCCCTCTCTACTTTGCCAATCAGAGATCTTCAAGGCAAAAGGTC  
ATGCCAAGGTAAGGCTCAGTCCCTGGCGACCAGAGGCTCTGGACAGAGAGTGGCCGGAA  
[A,G]  
ATGGAAGCAGAAGGGCGGTGGGAGCTGAGAATAGGCCACTCCCATAGAGGGTGGAGGTCA  
AGATTGCTGTTGGCTCTCTCCCTGCAGACAGGCATGGACCCCAAGAAAGTATTACTAGCC  
AAGCAAAAATACCTCAAGAAGCAGGAGAAGCGGAGAATGAGGCCCAACAACAGAGAGG  
TCTCTATTATGAAAACCAAGGTGAATGAAGGCCAGAAGCAGCCCCGTGCCCTGCTCTCC  
TGCCCATTTCTGATACTGCCCCCTGTTACTCATGGTACCCTGGGGGCCCCGCTTCCCACCC
- 15041 ACCAAGGTGAATGAAGGCCAGAAGCAGCCCCGTGCCCTGCTCTCCTGCCATTCTGATAC  
TGCCCCCTGTTACTCATGGTACCCTGGGGGCCCCGCTTCCCACCCTGACAGGCAAAGACA  
GAAAGTCTCTGGGAACACTGCCTGGTGGCCGCTGGGCATTTTTCTTCTTTTTTTCTTTT  
TCTTTTAGAGATGGAATTTTGTCTTGTCAACAGGCTTGAGTGCAATGGCGTTATCTT  
GGCTCACTGCAACCTCCACCTCTGGGGTTCAAGCGATTCTCCTGCCTTAGCCTCCCAAGT  
[C,A]  
GCTGAGATTACAGGTGCCACCACACCCAGCTAATTTTTGTATTTTGTAGATATTGGGT  
TTACCATGTTGGCCAGGCTGGTGTCAAACCTCTGACCTCAGGTGATCCACCTACCTTAG  
CCTTCCAAAGTCTGGGATTACAAGCCTGAGCCACTGCGCCAGCCTGGGCATTTTTCTT  
CTTGGATGAGGTGCTACCATCTCCAGGGAAGCCACTGAACCCCAAGGCCCTTCTCCAT  
TTTCTGGCTAAGATAGGACATGGCCCATGGACTTTTGAACAACCCAGAGGGGGAACAGCA
- 15053 GAAGGCCAGAAGCAGCCCCGTGCCCTGCTCTCCTGCCATTCTGATACTGCCCCCTGTTA  
CTCATGGTACCCTGGGGGCCCCGCTTCCCACCCTGACAGGCAAAGACAGAAAGTCTCTGG  
GAACACTGCCTGGTGGCCGCTGGGCATTTTTCTTCTTTTTTTCTTTTTCTTTTAGAGA  
TGGAATTTTGTCTTGTCAACAGGCTTGAGTGCAATGGCGTTATCTTGGCTCACTGCAA  
CCTCCACCTCTGGGGTTCAAGCGATTCTCCTGCCTTAGCCTCCCAAGTCGCTGAGATTAC  
[A,C]  
GGTGCCACCACACCCAGCTAATTTTTGTATTTTGTAGTATATTGGGTTTACCATGTTG  
GCCAGGCTGGTGTCAAACCTCTGACCTCAGGTGATCCACCTACCTTAGCCTTCCAAAGTG  
CTGGGATTACAAGCCTGAGCCACTGCGCCAGCCTGGGCATTTTTCTTCTTGGATGAGGT  
GCTACCATCTCCAGGGAAGCCACTGAACCCCAAGGCCCTTCTCCATTTCTGGCTAAG  
ATAGGACATGGCCCATGGACTTTTGAACAACCCAGAGGGGGAACAGCAGTGAATTTCTGT
- 15065 CAGCCCCGTGCCCTGCTCTCCTGCCATTCTGATACTGCCCCCTGTTACTCATGGTACCC

FIGURE 3N



- TGGGGGCCCCGCTTCCACCTGACAGGCAAAGACAGAAAGTCTCTGGGAACACTGCCTG  
GTGGCCGCTGGGCATTTTTCTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTT  
CTTGTCAACCCAGGCTTGGTGCAATGGCGTTATCTTGGCTCACTGCAACCTCCACCTCTG  
GGGTTCAAGCGATTCTCTGCCTTAGCCTCCCAAGTCGCTGAGATTACAGGTGCCACCAC  
[A, G]  
CCAGCTAATTTTTGTATTTTTAGTAGATATTGGGTTTACCATGTTGGCCAGGCTGGTG  
TCAAACCTCTGACCTCAGGTGATCCACCTACCTTAGCCTTCAAAGTGCTGGGATTACAA  
GCCTGAGCCACTGCGCCAGCCTGGGCATTTTTCTTTCTTGGATGAGGTGCTACCATCTCC  
CAGGGAAGCCACTGAACCCCCAAGGCCCTTCTCCATTTTCTGGCTAAGATAGGACATGGC  
CCATGGACTTTTGAACAACCCAGAGGGGGAACAGCAGTGAATTTCTGGGGAACCCAGGC
- 15108 TGTTACTCATGGTACCCTGGGGGCCCCGCTTCCACCTGACAGGCAAAGACAGAAAGTCT  
TCTGGGAACACTGCCTGGTGGCCGCTGGGCATTTTTCTTTCTTTTCTTTTCTTTTCTTTT  
AGAGATGGAATTTTCTTGTCAACCCAGGCTTGGTGCAATGGCGTTATCTTGGCTCAC  
TGCAACCTCCACCTCTGGGTTCAAGCGATTCTCTGCCTTAGCCTCCCAAGTCGCTGAG  
ATTACAGGTGCCACACCCAGCTAATTTTTGTATTTTTAGTAGATATTGGGTTTCACC  
[A, C]  
TGTTGGCCAGGCTGGTGTCAAACCTCTGACCTCAGGTGATCCACCTACCTTAGCCTTCCA  
AAGTGCTGGGATTACAAGCCTGAGCCACTGCGCCAGCCTGGGCATTTTTCTTTCTTGGAT  
GAGGTGCTACCATCTCCAGGGAAGCCACTGAACCCCCAAGGCCCTTCTCCATTTTCTGG  
CTAAGATAGGACATGGCCCATGGACTTTTGAACAACCCAGAGGGGGAACAGCAGTGAATT  
TCCTGGGGAACCCAGGCAGCCAGGGCTAGCAAGGCTGGGGTGGCCATGGCAGTAATCTCT
- 16274 CTTCCAGACTGTCTCCCTGCAGGAGCTGCAGCAGGACTTTGAGAATGCGCCCCCACCAGA  
CCCCAACAAACCAGACCCCGGCTAACGGCACCAGCGTGTCTATATCACCTTCAGCCC  
TGACAGCTCCTCACCTGCCCAGAGTGAGCCACCAGCCTCCGCTGAGGCCCCCGGCGAGCC  
CAGTGACATGCTGGCCAGCGTCCACCCCTTCGTACCTTCCACACCTCATCTGGACAT  
GAGTGGAGTCAGCTTCGTGGACTTGATGGGCATCAAGGCCCTGGCCAAGGTGAGGCCCTC  
[-, G]  
GGGACAGCAAGCACCCACTCCACCCCTCCGCTCTGCTCTCCACATTCCCTTTCTTG  
GGAGCCCTCATTTAGGAAGCTGAGGGAGGAAGCTCACTGGGGAGACTAACAGCTCCTAG  
GAATCCCTCCTTTCCCAAGACGCCAGGTTGAGACATTCTCCACAGAGCAGGCCCAGA  
CGGCCCATGACAATGAGTGGCGGGACAAGTCTACCAGAGTTTCAGGCCCTGTGCTCCA  
ACACCCCCAGCAGTGCCCATCCCAAGTCCCTCTCAGCCATCAGGAACCCACCCAGGTTCT
- 17424 AACATGGTGAAACCCCGCTCTACTAAAAATACAAAAATTAGCCAGGTGTGGTGACGGGC  
CCCTGTAGTCCCAGCTACTCGGTAGGCTGAGGCAGAGAATTGCTTGAACCCAGGAGGCGG  
AGGTTGCAGTGAGCCAAGATCGCGCCACTGCACTCCAGCCTGGGCAACAGAGTGAAACTC  
CATCTCAAAAGAAAAAAGAAAAATATCTAGCCCCAAGAAGGGGCCATGGTGACTTT  
AAGTGCCCGCCAGCTTGGCAAAAGTCCATTTCCGCTCCACTTCCAGAGAAACCGTCAGC  
[C, T]  
AACACTCCAGGGAGAAGTGGTGTGCTTTGCTGCTATTTTTGTCTTTGGCTGCTGGGCTCT  
CAGGGTTGCTTATTTGTTTGGCTTCCCTCTGAAGTACGTTTTGTGAATCACTTTTGAGA  
CCCACTCAGAACATTTCTTTTGCCTCCCTACCCCAACACATTTCTAGCTGAGCT  
CCACCTATGGGAAGATCGGCGTGAAGGTCTTCTTGGTGAACATCCATGGTAAGAGAAAGA  
GGACATTTAGGGACTGAAAGACTGGCAAGGAGTGTGGGGTAGGAACAGGTTGGTGGGGTCT
- 17627 AATATCTAGCCCCACAAGAAGGGGCCATGGTGACTTTAAGTGCCCGCCACGTTGGCAAAA  
GTCCATTTCCGCTCCACTTCCAGAGAAACCGTCAGCCAACACTCCAGGGAGAAGTGGTG  
TGCTTTGCTGCTATTTTGTCTTTGGCTGCTGGGCTCTCAGGGTTGCTTATTTGTTTGGC  
TTCCCTCTGAAGTACGTTTTGTGAATCACTTTTGAAGCCACTCAGAACATTCTTTCC  
TTTTGCTTCCCTACCCCAACACATTTCTAGCTGAGCTCCACCTATGGGAAGATCGGCGT  
[G, A]  
AAGGTCTTCTTGGTGAACATCCATGGTAAGAGAAAGAGGACATTTAGGGACTGAAAGACT  
GGCAAGGAGTGTGGGTAGGAACAGTTGGTGGGTCTGAATAGTGAGGAGGTTGGAAC  
GAGAGCACCCAGCTATCCCCCAAGCTGCTGCCTGCTCATAAAAGCTTCAGGTACAAGT  
CCAAAGAGACTGGTCAGATTGCATAAACATCTAGGGGCCTTAGTGACAGAGTGGGGGTG  
AGGAGGTCTGGAGTTACAGAAGGACAGCTAGGATTCTAATCTACCCATAACTAATTTG
- 18427 GGGTGCATATACACAGCCTCAAGGACGTGGCCACAGGGCAGCAGACATTTACATGACTAG  
CATGTACGCAAAGTGACAGATGTGGGAGCAAGTGACACAGACACACAGGAGAATGTGA  
AGGGGCACATACACACACCCAGCTCCCTGCACTGGGTGAGACCCCTCCAGCAGGGCT  
GCAGTCCCAGCTCCGATGGCCACGTTGGGGAGAGAATCTGAGTGGCAATGACCTG  
CTATGATATGTTCTGGAGTTAGAAGCAGTGGATTCTCCCAACCTCACTGGACACCCCT  
[T, C]  
AGGAAACCATCTCTAGGATTAAGAGTAATCCACACAACTTCCAATGCCACACATTGGAA  
GTTGCTGGAAAGTCTGGGAAAACAGAGGAAGGATGGGTCTTGGGGGATAGAAGTGC  
AGCGGCCTCTTCAAGGATGGCTTAGGCTTTTCCACTCGAATCACCACAAAGTACTGACTC

FIGURE 30



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

CCTAAATCAAACCTGCTTCTTCTGCTCTGGGTTGAACTTCAGCATCCTCAAGTTCATGT  
TGCCCTCTGCCGTCCAGAACTGATATTGCACTGCCAATGCCATGGCCCTCAGATACAGCA

18813 AGAGGAAGGATGGGTCTTGGGGATAGAACTGGCAGCGGCCTCTTCAAGGATGGCTTAG  
GCTTTTCCACTCGAATCACCACAAAGTACTGACTCCCTAAATCAAACCTGCTTCTTCTGC  
TCTGGGTTGAACTTCAGCATCCTCAAGTTCATGTTGCCCTCTGCCGTCCAGAACTGATA  
TTGCACTGCCAATGCCATGGCCCTCAGATACAGCAAGAGCTGGGACCTCAGGCCTCTCCC  
ATCCCTGCTCTGGTCTCACTATCTTCCCACCCCAAGCTCCAATCCCAATGGCTGTTAT  
[C, G]  
TTTCTGAAGGTGATCTTTTCTCCTTCTAGCCCAGGTGTACAATGACATTAGCCATGGAGG  
CGTCTTTGAGGATGGGAGTCTAGAATGCAAGCACGTCTTCCCAGCATACATGACGCAGT  
CCTCTTTGCCAGGCAAACTGCTAGAGACGTGACCCCAAGGACACAACTTCCAAGGGGTAAAG  
GTTCTTGACCTGGGAATCCTAGGCTCCAAGGCACTGAAATAGCAGGACCAAGAGGCAT  
TATTAGAAAGAACACAGGAGAAGGTTTAAAGTCCAATATCAAGTCTGCCATTTCAAGTTT

19035 GGACCTCAGGCCTCTCCCATCCCTGCTCTGGTCTCACTATCTTCCCACCCCAAGCTCCA  
ATCCACAATGGCTGTTATCTTCTGAAGGTGATCTTTTCTCCTTCTAGCCCAGGTGTACA  
ATGACATTAGCCATGGAGGCGTCTTTGAGGATGGGAGTCTAGAATGCAAGCACGTCTTTC  
CCAGCATACATGACGCAGTCTCTTTGCCAGGCAAACTGCTAGAGACGTGACCCCAAGGAC  
ACAACTTCCAAGGGGTAAGGTTCTTGACCTGGGGAATCCTAGGCTCCAAGGCACTGAAA  
[T, C]  
AGCAGGACCAAGAGGCATTATTAGAAAGAACACAGGAGAAGGTTTAAAGTCCAATATCAA  
GTCTGCCATTTCAAGTTTCTGAATCTGTTTCTTATCTATAGAATGAGCACCATCAACTA  
ACATTACCTACCTCTGCACTTTTCTTTATTTTGTGTTTAAAGGTTAAATGATAATTACA  
TCTTTTGTGTCACTTGAAAGCACTTTGTGATTGTAATAATTTCTTATCAATATAAGTTT  
TCTGGTTGCACAAACACCCAAAGCATAGTAGAGCAGGCCCACTCTGCTGGCATCGTTC

19182 AGGATGGGAGTCTAGAATGCAAGCACGTCTTCCCAGCATACATGACGCAGTCTCTTTG  
CCCAGGCAAACTGCTAGAGACGTGACCCCAAGGACACAACTTCCAAGGGGTAAGGTTCTTGC  
ACCTGGGGAATCCTAGGCTCCAAGGCACTGAAATAGCAGGACCAAGAGGCATTATTAGAA  
AGAACACAGGAGAAGGTTTAAAGTCCAATATCAAGTCTGCCATTTCAAGTTTCTGAATCT  
GTTTCTTATCTATAGAATGAGCACCATCAACTAACATTACCTACCTCTCTGCATTTTTC  
[T, C]  
TTTATTTTGTGTTTAAAGGTTAAATGATAATTACATCTTTTGTGTCACTTGAAAGCACTTTG  
TGATTGTAAAAATTTCTTATCAATATAAGTTTCTGGTTGCACAAACACCCAAAGCATA  
GTAGAGCAGGCCCACTCTGCTGGCATCGTTCCCTGCCTCCTCCTCATCTCTTTCTAAAGG  
GGGCTTTGGGAAGGGAGGGGAGGGGAGTAAGCCTACCCATTTTAACTTACCGGAGCTTA  
GAGATTTCAAGGCTGGTGAGGGATAAAGAGATTGGGTCTGAGTTTGTCTCAGCTTTTGA

19508 TAATTACATCTTTTGTGTCACTTGAAAGCACTTTGTGATTGTAAAAATTTCTTATCAAT  
ATAAGTTTTCTGGTTGCACAAACACCCAAAGCATAGTAGAGCAGGCCCACTCTGCTGGCA  
TCGTTCCCTGCCTCCTCCTCATCTCTTCTAAAGGGGGCTTTGCGGAAGGGAGGGGAGGG  
GAGTAAGCCTACCCATTTTAACTTACCGGAGCTTAGAGATTTCAAGGCTGGTGAGGGATAA  
AGAGATTGGGTCTGAGTTTGTCTCAGCTTTTGTGACATTTAATTTACTAGCTCAGTAAGT  
[-, G, C]  
ATACAAATGGGATACAAATAACACCATCTAAAACCTCCAGAAGACTGGGGAGTCAGAAAAA  
TCCTACCTCCTTGGGTCCTGCCAGATCCCAGTCACTCTAGCCCTCAGGGTCCCCT  
CCAGCAGGCCCACTCTGCCCTTGGCTCCCAAGACTCTTGTGTGCCCAAGCCCTGGGTAA  
AAACCTCCCCTGCCCTCTGTGGGTATAAGAAAGGCTTTTCTGGCCCTAGAGCAATGATT  
TGCTCTTTGCCTTAAGAGACTGATGAAGGTGAAACCATCTGTTCTAAGTGCTGAAAGACT

19571 AGTTTTCTGGTTGCACAAACACCCAAAGCATAGTAGAGCAGGCCCACTCTGCTGGCATCG  
TTCCCTGCCTCCTCCTCATCTCTTCTAAAGGGGGCTTTGCGGAAGGGAGGGGAGGGGAG  
TAAGCCTACCCATTTTAACTTACCGGAGCTTAGAGATTTCAAGGCTGGTGAGGGATAAAGA  
GATTGGGTCTGAGTTTGTCTCAGCTTTTGTGACATTTAATTTACTAGCTCAGTAAGTCAT  
ACAAATGGGATACAAATAACACCATCTAAAACCTCCAGAAGACTGGGGAGTCAGAAAAATC  
[T, G, C]  
TACCTCCTTGGGGTCCCTGCCAGATCCCAGTCACTCTAGCCCTCAGGGTCCCCTCCC  
AGCTCAGCTCCTGCCCTTGGCTCCCAAGACTCTTGTGTGCCCAAGCCCTGGGTAAAAA  
CCTCCCCTGCCCTCTGTGGGTATAAGAAAGGCTTTTCTGGCCCTAGAGCAATGATTTG  
TCTTTGCCCTTAAGAGACTGATGAAGGTGAAACCATCTGTTCTAAGTGCTGAAAGACTGCC  
CAGGAACACACAGGGCGCTGGCTCCTGCCCTCCATGCCTAGAGGGAAACCTGGGGAAAC

20147 GCCTAGAGGGAAACCTGGGGAAACAACGGGCTTTCTGCTTCGTGAAATTTGTCCGAG  
AGCAAAGAGGGAGATTCTGGAGGAAGCTGCATTAGTTGTTAGTGCCTAATCATGTTTCAG  
CTACTCTAGTTGGTATGTATACTTGATTAGTCATAGCACTTATAATAATTTATATTTTA  
TATAATATATACTTACATATTATAGACCACTTACAGATACAAATCACACACATAAACACA  
CACCTTTTCAACAGCATTGTGAGGGACAAAGCAGGCAAAAGTGAGGCTGGTTATCAGACTT

FIGURE 3P



- [T, G]  
AACAGATTAGAAATATATTCCCAGGAGGACAGGAATCCCCAAGGTCAGGCAGCTAGCC  
AATAGTTTTCTAAGCTGAGTAAACCTTCCCTGCCTCTAACGGCCCAAAAGGAGGGAA  
GACCGGATACACACCTGTCTGGTATAAGGGGGAAGACCACAGCCGTGCTGTTTTGTGA  
GGCAGGTAAGGGAAGGGCAAGAGGATAAGTCATGTGTAGGAAGCAGCTCCAACCAGA  
GCCGGCCACCTGTCCCTTTCTGCCACCATGCACCACTTTGCTGTTCACTCACTGAAG
- 20180  
TTCTGCTTCGTGAAATTTGTCCGCAGAGCAAAGAGGGAGATTCTGGAGGAAGCTGCATT  
AGTTGTTAGTGCCCTAATCATGTTCACTACTCTAGTTGGTATGTATACTTGATTAGTCA  
TAGCACTTATAAATAATTTATATTTTATATAATATATACTTACATATTATAGACCATTCA  
CAGATACAAATCACACATAAAACACACACCTTTTCAACAGCATTGTGAGGGACAAAGCA  
GGCAAAGTGAGGCTGGTTATCAGACTTTAACAGATTAGAAAAATATATTTCCAGGAGGACA  
[G, A]  
GAATTTCCCAAGGTCAGGCAGCTAGCCAATAGTTTTCTAAGCTGAGTAAACCTTCCCT  
GCCTCTAACGGCCCAAAAGGAGGGGAAGACCGGATACACACCTGTCTGGTATAAGGGG  
AAGACCACAGCCGTGCTGTTTTGTGAGGCAGGTAAGGGAAGGGGCAAGGATAAGTCA  
TGTGTAGGAAGCAGCTCCAACCAGAGCCGGCCACCTGTCCCTTTCTGCCACCATGC  
ACCACTTTGCTGTTCACTCACTGAAGCTCATTCTGCACTGGCTTCTCCCTTCAGGCT
- 20584  
TGTCTGGTATAAGGGGGAAGACCACAGCCGTGCTGTTTTGTGAGGCAGGTAAGGGAAGG  
GGCAAGAGGATAAGTCATGTGTAGGAAGCAGCTCCAACCAGAGCCGGCCACCTGTCCC  
TTTTCTGCCACCATGCACCACTTTGCTGTTCACTCACTGAAGCTCATTCTGCACTGGC  
TTCTCTCCCTTCCAGGCTCCAGGGGATGCTGAGCTCTCTTGTACGACTCAGAGGAGGACA  
TTCCGAGCTACTGGGACTTAGAGCAGGTGAGCTGAGGGAAGGGGCTGTGAGGGTGGGAGC  
[A, T]  
GGGCGAAGAGGGGAAGGATGGGGTCTGTCAAATACAAGGCGTTCACTCAGCTGTCTCA  
CCTCCAGCCCAGAGCAGTCACATTTCAAGGCCACAAAGATTTGTGGTCATCTTTGTTTTT  
TTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTTCTTTT  
AGACTGGAATGCAGTGGCATGATCTCAGCTCACTGCAACCTCTGCCTCCCGGTTCCAGA  
GGTTCTCTGCCTCAGCCTCCCGAGTAGCTGGGACTTCAGGCCTGCGCCAGCTAATTTT
- 20717  
ATGCACCAACTTTGCTGTTCACTCACTGAAGCTCATTCTGCACTGGCTTCTCCCTTCCA  
GGCTCCAGGGGATGCTGAGCTCTCTTGTACGACTCAGAGGAGGACATTCGCAGCTACTG  
GGACTTAGAGCAGGTGAGCTGAGGGAAGGGGCTGTGAGGGTGGGAGCAGGGCGAAGAGGG  
GAAGGATGGGGTCTGTCAAATACAAGGCGTTCACTCAGCTGTCTCACCTCCAGCCCAG  
AGCAGTCACATTCAGGCCACAAAGATTTGTGGTCATCTTTGTTTTTTTCTTTTCTTTT  
[T, C]  
CTTTTTTTTTTTTTTTAATTTGAGACAAAGTCTCACTCTATCACCCAGACTGGAATGCA  
GTGGCATGTTCTCAGCTCACTGCAACCTCTGCCTCCCGGTTCCAGAGGTTCTCTGCCT  
CAGCCTCCCGAGTAGCTGGGACTTCAGGCCTGCGCCAGCTAATTTTGTATTTTATGTA  
GAGACAGCTTTTACCATGTTGGCTGGGCTGGTCTCGAACTTCCGATCTCAAGCAATCTG  
CCTGCCTCGGTCTCCTAAGTGCTGGATTACAGGCATAAGCCACGATGCCTGGCCTTTGT
- 20894  
GGGGAAGGATGGGGTCTGTCAAATACAAGGCGTTCACTCAGCTGTCTCACCTCCAGCC  
CAGAGCAGTCACATTCAGGCCACAAAGATTTGTGGTCATCTTTGTTTTTTTCTTTTCT  
TTTTCTTTTTTTTTTTTTTAAATTTGAGACAAAGTCTCACTCTATCACCCAGACTGGAA  
TGCACTGGCATGATCTCAGCTCACTGCAACCTCTGCCTCCCGGTTCCAGAGGTTCTCT  
GCCTCAGCCTCCCGAGTAGCTGGGACTTCAGGCCTGCGCCAGCTAATTTTGTATTTT  
[A, G]  
GTAGAGACAGCTTTTACCATGTTGGCTGGGCTGGTCTCGAACTTCCGATCTCAAGCAAT  
CTGCCTGCCTCGGTCTCCTAAGTGCTGGATTACAGGCATAAGCCACGATGCCTGGCCTT  
TGTTTTCTTTCTTTCTCACTCCCTGAAAGGCATCGTGGGAGAGGGTGAGTCACTGGACCA  
AGTCCTAGAGAACCAGTATCTATTCTTATTCTCCAACACATCACCCACGTGACCCTGAGC  
AAGCCACATACACCTGGGCCCTAGTTTTATCATCTGTGAAATTAGGGGAAACATAGGT
- 21787  
GGGTGCAATGGTTCACACCTGTAATCCCAGCACTTTGGGAGGCTGAGGTGGGCGGACCAC  
CTGAGGTGAGGATTTGAGACCAGCCTGGCCAACATGGCGAAACCCCGTCTCTACTAAAA  
GCACAAAAATTAGCCAGGCGTAGTGGTGCATGCCTGTAGTCCCAGCTACTCGGAAGTCTG  
AGGCATGAGATCACTTGAACCTGGGAGGCAGATGTTGAGTGAGCCGAGATCGTGCCAC  
TGCACTCCAGCTTGGGTGACAGAGCTAGACTGTCTCAAAAACAAACAAACAAACAAAC  
[-, A, C]  
TAAAGATATGTGGATATGAGGGATCACCATCCCCATAGGGCCCCTGGATTAACACCACC  
CCACCAATGCCCTGAATTAAGAAAGAACAGATGACTAGGTTTGAGAGAAATCTGGCTTTGG  
GTCTATGAGAAAGTAGTGTCTCTTTGTGCCTCTTCCCATTTCTTTTGTGACATTGAGCTCC  
ATGGTGCTCTGAATCCGTCTCTCACAGTGCTGATGGCAGGTGGGACAGATTAGAAAATAG  
AGCTGGAGCCACAGAGATTTGGCAGACTGATTTGGTGCCCTCTTGAATCTCCAGCACA
- 22264  
CTCCATGGTGCTCTGAATCCGTCTCTCACAGTGCTGATGGCAGGTGGGACAGATTAGAAA

FIGURE 3Q



Docket No.: CL000861  
Serial No.: 09/749,589  
Inventors: Karl GUEGLER et al.  
Title: ISOLATED HUMAN TRANSPORTER...

ATAGAGCTGGAGCCACAGAGATTTGGCAGACTGATTCGGTGCCCTCTTGGAATCTCCAG  
CACATTTCAAAAAAGCCTGGATAGGACCAAAATAGCTTATCAACGTGAGAAAGGACTTCAG  
AGCTTGTCTACTGCCAACCTCATTTTACCCAATGAGGAAAGTGAAGCTATTAGGGGGCG  
AGGGACACGTGGAAGGTCACACAGCACACAGGAGGTGATTCACATGTAGATTTTACGACC  
[T, C]  
GCTCCTGCCACGCTGGACTGGTTACCTCCTAGGCTGACCTGCCTCTCCCCTGTTACA  
CAGACTCTCGCACACACACACACACACACAGGTGCTTTGTTCTGGCCAGG  
GGTTCCCTAGGGTCACCTCTTGTTGCAGCCACTGTGACCCCAACTGGTCTAACCTCTCTC  
TTCCCCTCCCCTTCTTCTGTGGTTCTGCAGGAGATGTTGGGAGCATGTTTACGC  
AGAGACCTGACCGCCCTGTGAGGGCTCAGCCAGTCTCATGCTGCCTACAGAGTGCCTG

22338 ACAGAGATTTGGCAGACTGATTCGGTGCCCTCTTGGAATCTCCAGCACATTTCAAAAAAG  
CCTGGATAGGACCAAAATAGCTTATCAACGTGAGAAAGGACTTCAGAGCTTGTCTACTGC  
CAACCTCATTTTACCCAATGAGGAAAGTGAAGCTATTAGGGGGCGAGGGACACGTGGAA  
GGTCACACAGCACACAGGAGGTGATTCACATGTAGATTTTACGACCTGCTCCTGCCACG  
TGGACTGGTTACCTCCTAGGCTGACCTGCCTCTCCCCTGTTACACACACTCTCGCAC  
[-, C, A]  
CACACACACACACACACACACAGGTGCTTTGTTCTGGCCAGGGGTTCTAGGGTCA  
CCTCTTGTTGCAGCCACTGTGACCCCAACTGGTCTAACCTCTCTCTTCCCCTCCCCTT  
CTTCCCTGTGGTTCTGCAGGAGATGTTGGGAGCATGTTTACGCAGAGACCTGACCG  
CCCTGTGAGGGCTCAGCCAGTCTCATGCTGCCTACAGAGTGCCTGGCACTTGGGACTTC  
CATAAAGGATGAGCCTGGGGTCACAGGGGGTGTGGGGCGAGGAAAGTGCATCCCCAGA

23363 CAGGGACCATGTGCTCTCCACACCCAGGAGTCTAGGCCTTGGAATCTGCGCCCCCGT  
CCATCATCCCCAAGGCTGCCCAAACCACTGCTGTGAGCAAGCACATCAGACTCTAGC  
CTGGACAGTGGCCAGGACCGTCGAGACCACAGAGTACCTCCCCGGGGACAGCCCACTA  
AGGTTCTGCCTCAGCCTCCTGAAACATCACTGCCCTCAGAGGCTGCTCCCTTCCCCTGGA  
GGCTGGCTAGAAACCCCAAAGAGGGGGATGGGTAGCTGCGAGAATCATCTGGCATCCTAG  
[T, C]  
AATAGATACAGTTATTCTGCACAAAACCTTTGGGAATTCCTCTTTGCACCCAGAGACTC  
AGAGGGGAAGAGGGTGCTAGTACCAACACAGGGAAACGGATGGGACCTGGGCCAGACA  
GTCCCCCTTGACCCCAAGGGCCCATCAGGGAATGCCTCCCTTTGGTAAATCTGCCTTATC  
CTTCTTTACCTGGCAAAGAGCCAATCATGTTAACTCTTCTTATCAGCCTGTGGCCAGA  
GACACAATGGGGTCTTCTGTAGGCAAAGGTGGAAGTCTCCAGGGATCCGCTACATCCC

23688 AAATTTTGGGAATTCCTCTTTGCACCCAGAGACTCAGAGGGGAAGAGGGTGCTAGTACC  
AACACAGGGAAACGGATGGGACCTGGGCCAGACAGTCCCCCTTGACCCAGGGCCCAT  
CAGGGAAATGCCTCCCTTTGGTAAATCTGCCTTATCCTTCTTTACCTGGCAAAGAGCCAA  
TCATGTTAACTCTTCTTATCAGCCTGTGGCCAGAGACACAATGGGGTCTTCTGTAGG  
CAAAGGTGGAAGTCTCAGGGATCCGCTACATCCCCTAACTGCATGCAGATGTGGAAAG  
[G, A]  
GGCTGATCCAGATTGGGTCTTCTGCACAGGAAGACTCTTTAACACCCTTAGGACCTCAG  
GCCATCTTCTCTATGAAGATGAAAATAGGGGTAAAGTTTCCATATGTACAAGGAGGTA  
TTGAGAGGAACCTACTGTTGACTTGAAAATAAATAGGTTCATGTGTAAGTGTTTTGTA  
AAATTTAGTGGAAATGCACAGAAAATCTTCTGGCCTCTCATCACTGCTTTTCTCAAGCT  
TCTTACGCTTAACAACCCCTTCCCTAACAGGTTGGGCTGGCCAGCCTAGGAAAACATCC

24210 TCACTGCTTTTCTCAAGCTTCTTCACTTAACAACCCCTTCCCTAACAGGTTGGGCTGGC  
CCAGCCTAGGAAAACATCCCCATTTCTAACTTCAGCCAGACCTGCGTTGTGTGTCTGTGT  
GTTGAGTGAGCTGGTCAGCTAACAAGTCTTCTTAGAGTTAAAGGAGGGGGTGCTGGCCAA  
GAGCCAACACATTTCTGGCCAGGAGCATTGCTTTTCTGTGAATTCATTATGCCATCTGG  
CTGCCAATGGAATCAAACTGGAAGGCGAAGGACAATGTTATCTGGGATTACCGTGC  
[A, C]  
CAGACCCGAAGTGCCAAATTCAGGAGGACAAGAGCCTTAGCCAATGACAACTCACTCT  
CCCCTACTCCACCTCCTTCCAAGTCCAGCTCAGGCCAGGAGGTGGGAGAAGGTACAGA  
GCCTCAGGAATTTCCAAGTCAGAGTCCCTTTGAACCAAGTATCTAGATCCCCTGAGGAC  
TTGATGAAGTGATCCTTAACCCCCAAGTAATCATTAACCCCAAGACCTCAGAACTG  
AAGGAGATTGTTGACCCAGTGACCTGGAGTTGAGGCTCAGGGAGAGATCTGCCACATGTC

FIGURE 3R